沙郡年记

A Sand County Almanac

每年，在仲冬过后，沙郡的雪便悄悄开始消融了。大自然真是一个伟大的魔法师，仿佛是在一夜之间，就能把厚厚的积雪变得无影无踪。融化的雪水汇成一条条清澈的小溪，丁丁冬冬地敲打着这片刚刚苏醒的土地。那声音，唤醒了夜里熟睡的生命，也催发了冬眠者的骚动。不信？看那昨天还蜷缩在洞穴里的臭鼬，今天已经伸直了身体。只见它拖着自己的大肚皮，冒冒失失地奔跑在湿漉漉的雪地里。在这周而复始的世界中，这一切，可以算作一年中最早的生命运动。

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第一部分 沙郡年记

言

一月

一月雪融

每年，在仲冬过后，沙郡的雪便悄悄开始消融了。大自然真是一个伟大的魔法师，仿佛是在一夜之间，就能把厚厚的积雪变得无影无踪。融化的雪水汇成一条条清澈的小溪，丁丁冬冬地敲打着这片刚刚苏醒的土地。那声音，唤醒了夜里熟睡的生命，也催发了冬眠者的骚动。不信？看那昨天还蜷缩在洞穴里的臭鼬，今天已经伸直了身体。只见它拖着自己的大肚皮，冒冒失失地奔跑在湿漉漉的雪地里。在这周而复始的世界中，这一切，可以算作一年中最早的生命运动。

臭鼬，径直奔跑在田野之上。它，好似对世俗的一切都漠不关心，又好似脱离了大自然的掌控。这种情形，实在地说，在其他的季节是极为罕见的。于是，我悄悄跟随在它的身后，想弄明白这小家伙究竟在想些什么，打算干些什么，它的胃口又是怎样的。

在一年中，从１月到６月，沙郡带给我们的欢乐真是越来越多。１月的时候，我们可以追寻臭鼬的足迹，可以搜寻山雀的脚环，可以了解鹿儿偷吃了哪几种松树的细枝嫩叶，还可以看看貂破坏了麝香鼠什么样的家。仅仅这些，便让我们无暇顾及其他的事情了。可以说，１月份既是简单的、恬静的，也是令人目不暇接的。而我们在这个时候，不仅能够知道谁都在做什么，还可以想想它们为什么这样做。

我正饶有兴致地追寻着一只臭鼬，冷不防，一只湿淋淋的田鼠从眼前跑了过去。我不禁纳闷：大白天里，这个家伙出来做什么呢？难道是发泄对雪融的怨气？是的，

雪融化了，它那引以为荣的雪下杂草中的秘密通道便赤裸裸地暴露了出来，这怎么不让人感觉到滑稽可笑呢？如果我没有猜错的话，那红彤彤的太阳一定嘲笑了这个小生命赖以生活的生存之所！

实际上，田鼠在大自然中可谓是一个理性的公民。它非常明白：当小草长高了，就可以把它们储存在地下，构建好多好多的草堆儿；而当大雪来临后，就可以在雪地里打通许许多多的暗道，把这些草堆儿一个个连接起来——这样，它们自己的生活供求和运输系统就可以完善地建立起来了。的确，对于田鼠而言，积雪就意味着不用再忍受饥饿和恐惧了。

不远处，一只毛脚鵟在空中游弋。忽然，它停住了，就像只翠鸟一样，俯视着身下的那块低洼地。然后，如一颗炮弹般笔直地射入了下面的沼泽之中。很久，它没有再次飞起。我知道，它一定是捕捉到了心爱的美食——那令人为其性命担忧的“田鼠工程师”。而且，现在，它一定在尽情地享受这顿美餐。哦，可怜的小家伙，你应该在属于你的夜晚，再来到这里视察你的家园。

我想，对于小草为什么会生长，毛脚可能是懵懂无知的。但是，对于雪融，它一定敏锐地感觉到自己捕捉田鼠的大好时机降临了。于是，它怀着雪融带来的满心欢喜，离开了那遥远的北极地区。可见，对于毛脚而言，积雪融化也意味着不需再为食物匮乏而发愁、为生命安全而担忧了。

我跟随着臭鼬的足迹，进入了一片树林。迎面而来的，是一块林间的空地。这里的雪，早已被众多的兔子践踏得十分结实；这时，如果你细心观察，还会发现上面依稀留有兔子粉红色的尿渍。橡树的细嫩枝芽已经长出来了，然而，兔子在雪融后迸发的欢乐使这些幼小的生命付出了代价——这从橡树上残留的啮痕就能一目了然。有趣的是，一簇簇的兔毛，表明了这里曾经爆发了一场雄性之间的争斗：那些发情的公兔们，为了赢得异性的芳心，显示了自己的勇敢和无畏。再往里走，我发现了一块血斑，它的周围是猫头鹰的翅膀所划下的弧形印痕。不难知道，积雪融化既让兔子有了丰盛的食物来源，也让它失掉了对于生命安全的戒备之心。而这时，猫头鹰便用鲜血提醒了它们：在陶醉于春天的喜悦之中时，一定不要对安全问题麻痹大意呀！

臭鼬的足迹继续向前延伸。看上去，它对于任何食物以及邻居的喜怒哀乐都毫不关心。我想弄明白它究竟在想些什么？是什么原因让它离开卧榻？它的雪地之旅是否怀有浪漫的动机？最终，寻着它的足迹，我发现这令人费解的家伙钻进了一堆浮木之中，便销声匿迹了。这时，旁边的原木里传出了清亮的滴水声。我想，这个小东西也一定听见了。走在回家的路上，我不禁对这一切回味良久……

二月

好橡木

如果没有一个属于自己的农场，那么，你便很容易形成两个错误的认识：一是认为每天的早餐都是来自于食品店里面；二是认为冬天里防寒的暖气乃是壁炉的功劳。

为了避免第一个错误的认识，你应该亲手侍弄一个菜园子。而且，这个菜园子最好远离食品店铺，以免混淆你的视听。

为了避免第二个错误的认识，你不妨在家中的柴架上存放一块优质的橡木。这样，当二月的暴风雪在屋外任意肆虐时，你就可以感到那橡木正温暖着你的小腿。至此，你那聪慧的头脑会告诉你真相：是橡木带给了你严冬里的温馨。这些，绝不是周末骑坐在取暖器上的城里人所能体会到的。

现在，在我身旁的壁炉柴架上燃烧得通红的橡木，原本生长在一条蜿蜒曲折、顺沙丘而上的移民古道旁。在砍下那棵橡树时，我曾经做了一番测量：树桩的直径足足有 30 英寸，其中包含了整整 80 个年轮。据此，我可以断定当年这橡树新生之时必定是在 1865 年，也就是说，在南北战争结束时，这棵橡树有了它的第一个年轮。然而，从橡树的生长过程来看，在其最初的 10 年或更长的一段时间里，它都会遭受兔子剥掉其表皮的厄运；直到第二年春天，表皮才会重新生长出来。的确，每一棵橡树幸存的原因都可以归结于野兔的轻忽或者其数量的衰减。相信有一天，如果某个有毅力的植物学家绘制出橡树生长的频率曲线的话，那么，人们将很清楚地看到这条曲线每十年便会隆起一次，而每个隆起的部分恰恰伴随着野兔数量的减少。（由于物种之间和物种内部这种永恒的斗争，动物界和植物界获得了共存共荣。）

19 世纪 60 年代，当我砍伐的这棵橡树正在生长的时候，很有可能恰逢野兔繁殖的衰退期。而作为这棵橡树前身的橡子，恐怕早已在十年之前便存在于此了。那时，想必有篷的马车还从它的旁边飞速驶过，一直奔向大西北。也许，正是这里迁徙的车水马龙破坏了路旁的植被状况，使得这粒橡子在阳光中萌发了第一片嫩叶。实际上，在 1000 粒橡子当中，只有 1 粒可以抵挡住兔子

的戕害，从而得以茁壮成长；其余的，在其生命处于萌发状态时，便湮没于莽莽草原之中了。

令人十分欣慰的是，这粒橡子摆脱了绝大多数同类者的命运：它顽强地生存了下来，并积聚了 80 多载 6 月骄阳的能量。现在，当我用自己的锯子和斧子把它带回家后，在历次的大风雪天气里，它释放出了久藏的热量，温暖了我的小屋，还有我的心灵。那从烟囱中升起来的一缕缕轻烟，仿佛在向众人诉说太阳公公并没有白白浪费自己的力气。

看起来，我的小狗并不在乎家里的暖气是从哪里来的，但它对于是否有暖气、暖气是否能够及时地享受到，倒是表现得十分关切。实际上，它对于我能够制造暖气这件事表现得深信不疑。因为，当我在寒冷而漆黑的拂晓双膝颤抖着起床生火时，它总是习以为常地挤过来，就站在我和木柴之间。于是，为了点燃那些柴禾，我拿着火柴的手不得不小心地从它的两腿间穿过。看着这个小家伙那份期待暖气的坚定信念，使你不得不相信那是一种“愚公移山”式的决心。

回想起来，使这棵不平凡的橡树难以成材的始作俑者是一道闪电。那是 7 月份的一个晚上，一声霹雳巨响惊醒了沉睡的人们。我们意识到刚才一定是一道闪电击中了附近的某一处。不过，由于家人都平安无事，我们便又很快进入了梦乡。在日常生活中，人们往往都是以自己的利益是否受损为中心，遇到闪电时，尤其如此。

翌日清晨，我们来到沙丘上漫步，与金光菊和车轴草一起庆贺昨夜的那场喜雨。然而，在不经意的一瞥间，我们发现路边橡树的躯干上新掉下来一块树皮：这块树皮足有 1 英尺宽，在树干上留下了一个长螺旋状的白色疤痕。而且，从木质尚未变黄上可以看出，它显然还没有被太阳暴晒过。又过了一天，我们再去看那棵橡树的时候，它的叶子已经开始枯萎了。这时我们才意识到，前夜的闪电早已给我们准备好了 3 大捆过冬的木柴。

这棵历经沧桑的老树的逝去，不由得让人为之叹惜；但我们同时也深信：它还会有无数的子孙后代勇敢挺立在这片沙地上，担负起成材的历史重任。

接下来，我们陪伴着这棵老橡树又沐浴了一年的阳光。虽然，这时的它早已不能享受了，但在这一年里，它得到了充分的风干，成了优质的木柴。于是，在一个清爽的冬天的早晨，我们带上准备停当的锯子，从它的坚实的根部锯割起来。立刻，蕴涵了历史芳香的细碎木屑在锯子切入的地方迸溅出来，不大一会儿，就在雪地上形成了两个小堆儿，静静地站在你面前。实际上，它们不仅仅是木屑，因为，这其中凝聚了一个世纪以来的缩影。我们的锯子，就这样，穿过那些古老的年轮，一点一点地，读懂了这棵橡树一生的意义。

锯子拉了十来个来回之后，便把我们的回忆切入到了身为农场主人的那些岁月 —— 在那几年里，我们逐渐学会了怎样爱护和珍惜脚下的这片农场。瞬间，我们又想起了自己前任的农场主 —— 那是一个私酒酿造者。他痛恨这片农场，于是

掘地三尺地掠夺走了土地中所有的财富，又烧掉了自己的房子。最终，他把一无所有的土地（连同拖欠的税赋）留给了郡县去管理。此后，他便消失得无影无踪，成了经济大萧条时期丧失土地的无名之辈。可是，尽管如此，在他管理这片农场期间，橡树还是义无返顾地成长了起来，从而为这个刻薄的主人积累了丰厚的财富。可以想像得到，那时橡树的锯屑，就像现在的一样，也是那么的芬芳，那么的香甜，那么的粉艳。不错，在橡树的心目中，主人是没有什么区别的。

在遭遇了 1930 年、1933 年、1934 年和 1936 年的历次尘暴和干旱后，这位私酒酿造者最终放弃了曾经属于自己的土地。我们依然记得，在属于他的日子里，橡木的轻烟从他的蒸馏房里袅袅升起；泥炭的火光在燃烧的沼泽地里闪闪发亮。这一切，必定让空中的太阳变得暗淡无光。而现在，各种自然资源保护措施已经在这里广泛开展起来了。只是，如今的锯木屑并没有显现出这些变化。

正当我们沉浸在对往事的回忆中时，身边忽然传来了带头者的喊声：“ 大家休息会儿！ ” 于是，我们便停下来歇口气儿。

一会儿，我们的回忆又来到了巴比特的 20 年代。那时，一切事物都在愚蠢和自大的氛围里追求更大、更强 —— 这种现象一直延续到 1929 年的股市突然崩盘为止。然而，我们知道，即使这棵橡树听到了股市崩盘的讯息，它依然会沉静如水。事实上，它对于州议会在此期间发布的几项爱护树木的措施都表现得那么安静和淡然。这些措施主要有：1921 年通过的一项新的森林法令、1924 年在上密西西比河河谷设立一个大型保护区的决定以及 1927 年制定的国家森林和伐木法。同样，当 1923 年本州的首只八哥来临、1925 年最后一只貂死去时，也没有让它感到一丝的惊讶。

1922 年，“ 大冰雹 ” 的降临摧毁了这棵橡树附近的所有榆树，但它 —— 我们伟大的朋友 —— 没有受到一丁点儿的影响。是的，对于一棵真正的优质橡树而言，一吨左右的冰雪又算得了什么呢？

“ 大家再休息会儿！ ” 正当我们遐思万千时，耳边又传来了带头者的吆喝声。

随着锯子的拉动，我们的思绪又飞到了 20 世纪的最初 10 年。这段时间是人们大做 “ 排水造田 ” 之梦的年代。那时，人们用蒸汽挖土机汲干了威斯康辛州中部的沼泽地，试图开辟出大片的农田。孰料，人们最终只是得到了一堆一堆的灰烬。在这种情况下，我们的沼泽地却万幸地躲过了被 “ 排水造田 ” 的劫难。之所以如此，倒不是那些工程师们慎重理性或者是自控力强，而是因为从 1913 年到 1916 年期间，每年的 4 月河流都要淹没这片沼泽地，而且，其来势大有不可阻挡之势。或许，这是一种向人类的防御性报复或复仇。可是，就在这种情境下，这棵橡树依旧勇敢地生长着。即使是在 1915 年，最高法院废除了州立森林，州长菲立普自以为是地宣布 “ 州立林业不是一项英明的商业计划 ”，它也丝毫没有改变自己的成长决心和姿态。（也许州长并没有想过，对于什么是 “ 好 ”，甚至什么是 “ 商业 ” 都有很多种含义。另外，他可能也没有想过，当法院在法律上明确规定了 “ 什么是好 ” 的时候，火灾却在大地上诠释了

“好”的另一种含义。本来，身为州长，是不应该在这些事情上有所懵懂的。）

然而，就在林业处于衰退期的这10年里，动物资源的保护措施却取得了长足的进展。1911年，各种保护区在全州范围内雨后春笋般建立起来；1912年，“雄鹿法令”出台，为雌鹿提供了必要的保护；1913年，出现了第一座州立猎场；1915年，联邦制定了禁止人们在春天狩猎的政策；1916年，雉又成功地在瓦克夏郡安下了家。从此，“保护区”成了人们心目中一个神圣的词汇。可这一切，对橡树而言，并没有带来多大的震动。

“休息会儿！”随着带头锯木者的口令，我们便又停歇了下来。

随着思绪的飞舞，我们来到了1910年。那一年，一位堪称伟大的大学校长第一次出版了一本关于自然资源保护方面的书籍；一次规模巨大的叶蜂流行病造成了数百万棵美洲落叶松的死亡；一次严重的干旱枯死了无数的松柏；一辆庞大的挖泥船淘干了霍利康沼泽里的水。

思绪的片段切入到1909年。那一年，胡瓜鱼首次被放养在了五大湖里；而当年潮湿的夏天也让立法机关削减了森林防火的经费。

时光倒流到1908年。那一年，气候非常干燥，随之引发了一场森林大火，熊熊燃烧的大火葬送了威斯康辛州的最后一只美洲狮。

时光回转到1907年。那一年，一只流浪的猞猁在寻找自己的乐园时迷失了方向，不幸地在丹恩郡的农场上结束了自己的生命。

时光流返到1906年。那一年，首任州政府的林务官正式上任了；也是在那一年，一场森林大火吞噬了数个沙郡的17000英亩林地。

我们再看1905年。那一年，一群来自北方的苍鹰飞到这里，把当地的松鸡吃得干干净净（确信无疑的是，它们必定曾栖息在这棵橡树上，也必定吃掉了属于我的松鸡）。再看1902年至1903年。那期间，我们遇到了有史以来最严酷的寒冬。然后是1901年，我们承受了最为严重的旱情（全年降水量只有17英寸）。最后是1900年，那是一个充满希望和祈祷的百年纪元；而橡树，在这一年里，只是一如既往地增添了一个年轮。

这时，旁边带头的锯木者又下达了休息的号令。

接下来，让我们看看19世纪90年代。这10年是被那些眼光从城市转向乡村的人称为快乐的日子。1899年，最后一只旅鸽在路过北方两个郡外的巴卡克时被子弹击中；1898年，在一个干燥的秋天过后，就是冰冻三尺的腊月，结果无数的苹果树在寒风中凋谢了；1897年，一个干旱的年份，在这一年里，一个林业委员会成立了；1896年，仅仅从史本那村就有25000只草原松鸡被装船运到了市场上；1895年，这是森林大火肆虐的一年；1894年，这一年干旱无雨；1893年，爆发了“蓝知更鸟风暴”——在这场3月份的大风雪中，迁徙而来的蓝知更鸟几乎全军覆没（早先的时候，蓝知更鸟总是在这棵橡树上歇脚，但在90年代中期以后，这种情形便已荡然无存了）。1892

年，这一年，森林大火再次光临；1891 年，伴随着松鸡数量的周期性变化，其数目在此时达到了低谷；1890 年，“ 巴布科克牛奶测试器 ” 的问世使得半个世纪之后的海尔州长夸口说威斯康辛州已经成为了美国的牛奶制造厂 —— 如今，就连州里的汽车牌照都已鲜明地体现了当地的这一地区特色，这恐怕是“ 牛奶测试器 ”的发明者巴布科克教授当时所没有想到的。

同样是在1890年，为了替草原之州上的乳牛建造一个红色的谷仓王国，历史上规模最庞大的松树筏顺威斯康辛河直流而下，这一切，我的好橡树都历历在目。现在，那些优质的松树伫立在牛群与风雪之间，恰如这棵橡树与风雪和我同在。

休息！旁边又传来了领头者的吆喝声。

下面，让我们一起来重温一下整个 19 世纪 80 年代的时光岁月。1889 年，这一年气候非常干燥，在这年里，植树节正式成为一个节日了；1887 年，威斯康辛州有了自己的第一位渔猎业的执法官；1886 年，州立农业大学第一次为农民举办了短期的培训课程；1885 年，一个前所未有的、漫长而寒冷的严冬揭开了此年的序幕；1883 年，麦迪逊大学的系主任 W · H · 亨利在一份报告中指出，那一年春天的花儿比往年迟开了足足 13 天；1882 年，由于 1881 年至 1882 年间的历史性“ 大雪 ” 和“ 严寒 ”，曼多塔湖的解冻时间比往年推延了 1 个月。

也是在 1881 年，威斯康辛州的农业协会为了一个问题而展开了激烈的争论：在最近的 30 年里，全国范围内都涌现出了黑色的橡树，其原因究竟是什么呢？实际上，我心爱的那一棵橡树也是属于这种情形的。围绕这个问题，大家莫衷一是：有的人认为这是一种自然现象；有的人则认为是南迁的鸽子吐落的橡子所造成的。

休息！旁边再次传来了领头者的喊声。

现在，让我们一起来回顾 19 世纪 70 年代 —— 这 10 年，是威斯康辛州陷入疯狂种植小麦的时期。1879 年一个星期一的早晨，当麦长蝽、蛴螬、锈病和贫瘠的土壤摆在农人面前时，大家终于意识到在种植小麦的竞赛中，自己根本不是西部草原的对手。现在，我不由得相信自己脚下的这片农场也参加了那场竞赛；而我心爱的橡树北面的风沙地，正是过度栽种小麦酿成的恶果。

也是在这一年，威斯康辛州的河流里终于有了鲤鱼的身影；偃麦草也从欧洲搬迁到此落户了。此年的 10 月 27 日，在麦迪逊的德国卫里公会教堂的房顶上，出现了 6 只远道而来的草原榛鸡，它们怡然地观赏了这个处于成长之中的城市；而 11 月 8 日这一天，根据有关的消息报道，麦迪逊的市场中堆满了待售的鸭子，每只的价格只有区区的一毛钱。

1878 年，一位来自梭克急滩的猎鹿人大胆地预言：“ 在今后的日子里，猎人的数量恐怕要超过猎物本身了。”

1877 年 9 月 10 日，在马斯基戈湖畔，俩兄弟在一天之内便猎获了 210 只蓝翅鸭。

1876 年，这是有史以来最潮湿的一年 —— 年降水量达到了 50 英寸。也许是这个

缘故，本年草原榛鸡的数量大大减少了。

1875 年，在威斯康辛州往东一个郡距离的约克草原上，4 个猎人猎杀了 153 只榛鸡；也是在这一年，美国渔业委员会在距离我的这棵橡树以南 10 英里的魔鬼湖中放养了许多大西洋鲑鱼。

1874 年，首批由工厂制造生产的带刺的金属丝被钉到了成千上万的橡树上。而现在，我真切地希望眼下的这棵橡树中没有此类人工制造的东西。

1873 年，仅仅一家芝加哥公司就收购了 25000 只草原榛鸡来销售；而全年算来，芝加哥的榛鸡交易数量达到了惊人的 60 万只 —— 这些榛鸡的平均价格为每打 3.25 美元。

1872 年，在西南方向两个郡外的地方，威斯康辛州最后一只野生的火鸡被猎杀。

70 年代的 10 年，可以说既是拓荒者们终止小麦狂热幻想的 10 年，也是拓荒者们结束猎杀鸽子浪潮的 10 年。

1871 年，从我的这棵橡树往西北方向延伸 50 平方英里的三角区域内，大约有 1.36 亿只鸽子筑巢安家 —— 我想，其中肯定有几只就栖息在这棵橡树上，因为当时的它足足有 20 英尺高了。不幸的是，无数的猎鸽者拿着网子、猎枪、棍棒和盐砖来捕杀这些鸽子。于是，一列列的火车满载着那些死去的精灵，奔向了东部或南部的城市，在那里，它们将被加工制作成鸽肉馅饼。现在看来，那是鸽子在威斯康辛州最后一次大规模地筑巢；对其他州来说，情形大体也是如此。

在这一年里，我们还可以看到另外一些标志性事件：佩斯迪勾大火毁坏了数个郡的森林和土地；而芝加哥大火，据说是因为一头奶牛抗议性的一踢所酿成的。

1870 年，田鼠不甘寂寞，上演了自己的生命进行曲：它们吃光了这座年轻州郡的稚嫩果园，最终无奈地死去。万幸的是，我的这棵橡树因其厚硬的表皮而得以存活了下来。

同样是在这一年，一位“ 市场猎人 ”（供应市场需要的猎人）在《美国运动家》杂志上得意洋洋地炫耀，仅仅用了三四个月的时间，他就在芝加哥附近猎杀了约 6000 只鸭子。

休息！领头者的喊声又响了起来。

现在，我们的回忆来到了 19 世纪 60 年代。在这个 10 年里，无数的人为了弄清一个问题而前仆后继：人与人之间形成的生活共同体是否会轻易走向瓦解呢？最终，人们解决了这个难题。但是，那时乃至现在的人们都没有觉察到这个问题同样适用于人与土地之间的关系。

令人值得回味的是，在这 10 年间，人类历史的脚步并没有局限于此。1867 年，英克里斯·A·拉佛姆鼎力说服了州园艺学会为植树造林做出突出贡献者提供奖励。1866 年，威斯康辛州最后一只土生土长的赤鹿被猎杀。1865 年，也就是我的这棵橡树生长出髓心的那一年，约翰·缪尔决心向其兄长买一块地 —— 当时，他的兄长在这棵橡树以东 30 英里处拥有一片私家农场。缪尔之所以要这样做，实际上是要为野花提供一

个安稳的生长环境。人们也许不了解，在缪尔的成长历程中，野花曾经占据了重要的位置，可以说，没有它们，就没有缪尔那充满喜悦和温馨的少年时光。听了缪尔的请求后，他的哥哥以自己要在那里老去为由而加以拒绝了。不料，事情最后有了转机，缪尔坚决的心愿迫使自己的哥哥让了步。由此看来，在威斯康辛州的历史上，1865年仍然是人们对自然的、野生的、自由的生灵充满慈爱悲悯之情的一年。

现在，我们的锯子已经切入到了橡树的树心。紧接着，锯子便以倒叙的方式重新阅读了历史的光阴。伴随着这种对历史的重温，我们越来越逼近了伐木工程的终点。最后，这棵橡树的巨大树干突然颤抖了一下。于是，我们立刻拉出锯子，后退到了安全地带。这时，大家都不由地叫喊起来：“噢！好大的一株木材啊！”

随着人们的叫喊声，我的这棵心爱的橡树倾斜下来、呻吟起来，然后，它便以惊天动地的气势横卧在了孕育它多年的古道上。

接下来，摆在大家面前的工作便是把这棵橡树劈成木柴了。随着一段段的树干立起来，大锤在那钢制的楔子上一下下敲下去，不多时，芳香浓郁的木片就堆满了道路两旁。

对于历史学家而言，锯子、楔子和斧子的不同功能蕴涵着深刻的寓意。

锯子，以自己的方式，沿着历史的顺序，翻阅了一年又一年的记忆。它把每一年的史实摘录了下来，形成了许多的札记。这些成果，在伐木工人看来，称其为锯屑；在历史学家看来，则称其为历史的档案。不过，他们却有相似之处，即用肉眼可见的“样本”去分析隐藏其中的本质。直到锯子横穿了整个的历史年轮，橡树也倒了下去，人们才终于得出了对于整个世纪的总体结论。而橡树倒下所呈现的全部过程和内容，也恰恰生动地证明了纷繁复杂的历史所具有的有机性。

与锯子不同的是，楔子以放射状的方式切入橡木之中。这种方式，让你对历史或者一览无余，或者一无所得。而结果之所以不同，全依赖于你是如何选择楔子的切入点的。（所以，当你没有把握从何处打下楔子时，你不妨让那树干干燥一年，直到它自己出现裂口。许多人匆匆忙忙打下了楔子，到头来，只得任由那楔子在难以劈开的木材纹理里生锈腐蚀。）

再说斧子。一般情况下，它只是斜着砍进木身，而且，也只是砍中表面代表最近几年的年轮。实际上，斧子本是专门用来修理树枝树杈的。在这一方面，锯子、楔子可以说是“心有余而力不足”。

然而，尽管这三种工具的意义各不相同，但对于优良的橡木或者非凡的历史而言，它们又都是必不可少的。

我默默思考着这些东西，不觉间，身边的水壶轻轻唱起了歌儿，而那优质的橡木也在白色的灰烬上面燃烧成了通红的木炭。我想，当春天来临时，我会把这些木炭灰埋到沙丘下的果园里。有一天，它们会再度来到我的身旁。不过，那时的它们，或许变成了红彤彤的苹果；或许变成了肥胖的10月松鼠的进取精神——它们那种难以解释

的一心播种橡子的热情。

三月

雁群归来

我们都知道，一只燕子是造就不了一个夏天的；但是，当一群大雁冲破３月的冰天雪地时，便预示着春天将要来临了。

我们不妨先看看那朱红雀，只见它欢声雀跃着——原来，它以为春天已经来临了，最后，等它清醒过来，知道自己弄错了，便又回归了冬日的寂静；还有那花栗鼠，离开了冬眠的小窝，打算晒一个日光浴，结果被一场大风雪扫了兴致，只好垂头丧气地回家去。然而，对于大雁来说，它们是怀着湖水解冻的希望，遭受了 200 英里昼夜迁徙的苦楚赶来的，自然就不能轻易言退了。从这个意义上看来，我们可以称这些大雁为破釜沉舟的勇士。

３月的清晨，当你一边漫步，一边仰望天空的雁影，倾听着悦耳的雁鸣，你是不会感到一丝的单调乏味的。从前，因为一个偶然的机会，我认识了一位受过高等教育的女士，她是美国大学优等生荣誉学会的会员。这位女士告诉我，虽然一年中有两次大雁都会向着她那隔音效果良好的房顶宣告季节的更替，但她从来没有亲眼看见过那些大雁。从这件事情上，我不禁纳闷：难道教育使人们学会了漠视那些发生在自己身边的事情吗？毕竟，在不久的将来，那些大雁就会化作一堆随风而逝的羽毛了。

实际上，向我们的农场宣告季节更替的大雁们知道许多威斯康辛州的事情，这其中就包括了州里的法律。每年的 11 月份，那些南飞的大雁便从高高的空中迅疾掠过，几乎不发出什么声响，这好似在向人们诉说一个真相：没有哪片沙洲或者泥沼令它们感到愉悦和欢喜。它们笔直地飞向农场南面 20 英里外的湖泊，其准确程度令一向以直线飞行著称的乌鸦自叹弗如。在那里，它们白天在水面上游荡；夜晚则去附近的玉米地里取食充饥。11 月份的大雁还深深懂得一个法则：无论是黎明还是黄昏，在自己生活的泥沼和池塘附近，都有贪婪的狩猎者的身影。

与此相对照，3月的大雁则演绎着截然不同的故事。虽然，从那些散落在地的、布满铅弹射击痕迹的羽翼上，我们可以判断出大雁整个冬天都在遭受着生命的威胁，但是，这些一点都不妨碍它们现在尽情地欢呼春天的到来。沿着蜿蜒曲折的河道，这些大雁低空掠过没有猎人守候的岬角和小岛，对着每个沙洲发出“啾啾”鸣叫，像是招呼久别重逢的故友；有时候，它们也飞过泥沼和草地，向每一个冰雪融化的水坑和池塘送出问候，像是适逢亲切的朋友。最终，它们在我们的泥沼地上空礼节性地盘旋几周后，张开翅膀，放下双腿，静静地滑向了不远处的池塘。在远处山丘的衬托下，我

们可以发现，它们的尾部是雪一样的白，这同黑色的双腿形成了鲜明的对比。刚刚触及湖水，这些新来的客人便大声喧哗起来，于是，水花也跟着在湖中绽开怒放。无形中，柔弱花蕾上的最后一点冬意便在这种情景中悄悄褪去了。可爱的大雁，欢迎你们归来！

而每年的这个时候，我都会希望自己化作一只田鼠，潜藏在泥沼之中，静静地端详这一切。

首批迁徙而来的客人安居下来以后，都会向后来者发出真诚的邀请。于是，几天以后，这里便洋溢了雁群的欢声笑语。正因为此，在我们的农场上通常有两个判断春天是否迷人的标准：其一是拥有松树的数量；其二就是客居的大雁的数目。在1946年4月11日这天，我们美丽的家园曾荣幸地请到了642只大雁，这可谓是规模空前的大型盛会。

就像在秋天时一样，雁群们每天仍然会到玉米地里去觅食。但不同的是，这时它们不再像以前那样，在夜晚中悄悄出去，而是大摇大摆地在白天出发。每次出发时，也不再保持安静，而是先就哪里的食物味道怎么样进行一场激烈的辩论；等到回来以后，这样的辩论甚至会显得更加激烈一些。这时，归来的雁群因为早已熟悉周围的生存环境，便不再试探性地在上空盘旋，而是像那枫叶一样飞舞而下，用优美的滑翔舞姿投向热情的欢迎者的身旁。接下来，我知道，它们彼此之间必然会就今天的美味做一番评论了。可是，有一点它们可能没有预想到，今天它们所享用的大餐只是因为被大雪覆盖了整个冬天，才没有成为那些乌鸦、野兔、田鼠或者雉鸡的俘虏。

通过观察，我们很容易发现，雁群非常偏好草原上的玉米地。之所以如此，我们不知道究竟是因为草原玉米具有很高的营养价值，还是自草原时代开始就遗留下来的古老传统。也许，这只是反映了一个简单的事实：草原玉米的面积呈现出扩大的趋势。如果能够了解雁群美餐前后所进行的争辩的内容，那么我们或许可以知悉它们喜好草原玉米的理由。不过，也正因为我们无从了解这件事情的真相，并由此有了对于大自然的某种神秘感，所以才拥有了特别的快乐。假使我们对生物界的一切都洞若观火，那才真是无味之极了。

在观察大雁们的日常行为和活动时，我们发现有一些孤单的雁，长时间地哀鸣着，飞来飞去，这些雁的数目好像还不在少数。它们的哀鸣声经常感染着人类那多愁善感的心灵。有的人就想，这些大雁一定是失去了自己的爱人或者子女。然而，富有经验的鸟类学家认为这种解释是站不住脚的。长期以来，对于这个问题，我也是抱着一种探讨的态度，不急于求得确定的答案。

有那么五六年的时间，我和自己的学生一直都在研究组成雁群的大雁的数目。而在这项研究中，我们非常巧合地找到了大雁落单儿的合理答案。从数学分析的角度来看，通常情况下，组成雁群的大雁的数目是6或6的倍数，这绝不是仅仅用“巧合”所能解释的。换句话说，一个雁群通常是由一个家庭或者数个家庭组成的；而那些在

春天里落单的雁儿，很可能就是冬季猎杀行动的幸存者：它们只能徒劳地寻找着昔日的亲人。现在，我终于可以毫无保留地选择和那些可怜的大雁一同伤恸和悲哀了。

当然，我们借助于枯燥的数学来解释爱鸟人那多愁善感的揣测的情形，并不是很多见的。

4月的夜晚，当天气渐暖、人们可以到屋外闲坐时，我们总爱倾听沼泽里雁群召开的会议。这时，有很长一段时间，雁儿们都会静悄悄的，不发出一点声响；我们只能听到沙锥鸟鼓翼的摩挲声、远处猫头鹰的咕咕声或者多情的黑鸭带鼻音的咯咯声。然后，突然间，随着一声震耳的雁鸣声，沼泽里爆发出了一阵喧嚣的回响：这其中，有雁儿的翅膀在水中拍打的声音，有在螺旋桨的带动下船儿破浪前进的声音，还有旁观的雁儿因不同的意见而发生激烈争执的声音。最后，伴随着一声低沉而有力的雁号声，一切又重归安静，只有雁儿之间那经常性的窃窃私语声依稀可闻。这时，我禁不住再次产生了化身作一只田鼠的美妙幻想。

到了银莲花盛开的时候，雁群逐渐变得稀少起来。而截止到5月份前，我们这里便又只剩下了长满绿草的潮湿的沼泽地。也许，红翼歌鸫和秧鸡的存在算是此时对寂寞的最大点缀。

具有历史讽刺意味的是，一直到1943年，在世界几个主要大国的倡导下，我们才在开罗成立了联合国。因此，不能不说，大雁这种整体观念的付诸实践要比我们早很多。而且，每年的3月，它们都会不惜以自己的生命为代价来诠释这种整体观念的价值。

不难想像，在我们这个自然界，一年四季，整体和谐的统一性首先体现在了广袤无垠的冰川上；随后，是3月的冰化和雪融；接着，从更新世以来，便是雁群的集体向北迁徙：从中国海到西伯利亚大草原，从幼发拉底河到窝瓦河，从纳恩到摩尔曼斯克，从林肯郡到斯匹次卑尔根群岛，从克里塔克到拉布拉多，从玛塔玛斯可特到昂加瓦，从豪斯休湖到哈得孙河，从艾弗里到巴芬地，从西弗吉尼亚到马肯吉，从萨克拉门托到育空区，都留下了它们整齐划一的歌声。

凭藉着雁群这个大家庭内部的广泛交流，伊利诺斯州玉米地里的剩余果实被带到了无夜天的6月的北极苔原。在那里，这些果实和充足的阳光一同哺育了雏雁，让它们快乐地成长。而每年，大雁们获取食物，享受阳光，摆脱夏日的孤独，追逐冬日的温暖，都在我们这块土地上留下一首天籁之歌。

四月

河水高涨

正如大江大河往往沿着大型城市蜿蜒而过一样，春天的洪水也会经常性地包围那

些比较贫瘠的农场。我们的农场便是如此。所以，当每年的 4 月份，我们来到这里时，洪水便把我们与外部世界隔离起来了。

其实，在一定程度上来说，我们是可以从天气预报中预测出北方的雪何时会融化的；进而，我们就可以估计：过不了多久，上游的城市就会竞相指责那到来的洪水了。可是，因为我们往往忽视了这样去做，便不得不面对那令人麻烦的不速之客了。于是，每当礼拜天的傍晚，我们该回城参加第二天的工作时，却由于河水高涨而不得不留在了农场里。这时，那涌动的河水就会轻吐悲伤之词，仿佛在为破坏了明天的“约会”而道歉；而那些雁儿，看着一块块玉米地变成了一个个湖泊，不由地发出了深情而热切的叫喊。到了第二天早晨，每隔几百米，我们还会发现，一些新来的雁儿正纷纷拍打着翅膀，好似要充当同伴的向导，指引大家观赏这新奇迷人的水上世界！

实际上，对于高涨的河水，大雁们所显示出来的热情是轻微的，对于那些不熟悉雁语的人们来说，这很容易被忽略掉。可是，相比较而言，鲤鱼所显露出来的热忱则是无比强烈、不容误解的：渐涨的河水刚刚弄湿了青草的根儿，它们的身影就出现在了人们的视野里——正如饥饿的小猪来到了绿油油的草地上一般，这些小鲤鱼们摇着红色的尾巴，摆着红色的肚皮，游弋在昨天还干燥无水的货车车辙里、老牛牛道上，调皮地穿梭于芦苇和灌木之间，那种急于探索新天地的心情，溢于言表。

与大雁和鲤鱼不同的是，面对高涨的河水，陆地栖息的鸟类和哺乳动物表现出了哲学家所具有的超然态度：一只红雀站在河岸边的红桦树上高声鸣叫着，好似宣告这里是它的地盘，只是，它脚下的红桦树所依赖的大地现在已经沉浸在了河水之中；一只披肩鸡，身披环状羽毛，在河水入侵的树林之中，发出了“仆仆”作响的振翅声，不用看，你就会猜到，此时此刻它肯定是站在一根振翅木的顶端上；一只田鼠，面带袖珍麝香鼠般的自信，镇静地游向地势较高的地方；一只鹿儿，从果园里匆忙跑出来，看看周围的情况，只好离开了平时白天的栖息之地——柳树丛里的安乐窝；再看那山丘之上，有好多的兔子，它们大摇大摆地接纳了人们没有使用的角落之地，好似向外界发出宣告，当“诺亚”不在时，这里就是它们的“方舟”。

春天的大水不只给我们带来了刺激和冒险，同时，它还能给我们带来来自上游的、意想不到的惊喜：一块陈旧的木板搁浅在我们的草地上。对我们而言，这木板绝不是那些从木场中运来的木板可以与之相媲美的——前者的‘价值’要远远高于后者。每一块这样的木板，都有自己的独特历史，这历史虽然不为外人所知，但你完全可以从木板的材料、尺寸以及上面的钉子、螺丝、油漆、磨损程度等窥探出端倪。而且，从木板的边缘和末端在沙洲上磨损的情形来看，你也可以猜测出它经受了多少次大水的冲击。

因此，我们可以说，区区一块木板，不仅仅体现了某个人的劳作情形，它还是上游农场里的人们在森林中努力工作的缩影。一块木板的自传，也是我们在大学校园里所不能领会到的独特文学作品。而手拿锤子和锯子的人们，在河边农场这样的“图书

馆”中，是可以任意遨游在那些独特的“文学作品”之中的——何况，这些“文学作品”，在每次的河水高涨中，总是有新的成果累加进来呢。

孤独，可区分为不同的种类，也可区分为不同的程度。静静伫立在湖中的孤岛可谓代表着一种孤独——不过，湖中有船，而有船，就表示总会有人来拜访；高耸入云的山峰可谓代表着又一种孤独——不过，山上有路，而有路，就表示总会有人来探求。这里，我要提醒的是：与春天的洪水所困守起来的孤独相比，上述情形都逊色太多。当然，大雁遭受的孤独也是无与伦比的。我知道，它们的经历比我还要多，还要复杂。

于是，面对这种寂寞和孤独，我们只好坐在新近绽放的银莲花畔，静静地观看雁儿飞过来，飞过去。转首望望我们的路，它的尽头消失在远处的水面上，我们便怀揣着窃喜而面带着超然的表情，把农场内外来往的交通困扰，留给了鱼儿，不再理会。

葶苈

此时此刻，我知道，用不了多久，花科植物中花瓣最小的葶苈将会用自己幼小的花蕾点缀这里的每一块沙地。

那些仰望蓝天、期待春意的人，无疑是不会注意到葶苈这样微小的生灵的；而那些对春天感到沮丧的人，即使脚踩到了葶苈，也恐怕觉察不到。只有那些用自己的身心去探询春意的有心人，才会发现葶苈原来生存在沙地里的每一个地方。

不过，我们要知道，葶苈是在一种怎样的境遇中生存着：它不敢奢望哪怕是多一点的温暖和舒适。可以说，它是在贫瘠的时空中顽强地舒展着自己的生命。在植物学家的著作里，你甚至很难找到关于它的描述，如果有，也是寥寥数语，匆匆带过，更不用说配幅插图了。但是，谁也不能否认，贫瘠的沙地、微弱的阳光，这些和美丽、朔大的花儿毫无关联的词汇却和葶苈紧密地联系在了一起。如果我们客观地评价葶苈，说它不能算作春天的花儿，但我们却有充足的理由把它作为希望的最佳代表。

的确，从外表上看来，葶苈很难给人以震撼的感受。如果说葶苈也有幽香，那么我相信，它肯定已经消失在了阵阵吹去的风中；还有它的白色的花朵，是那么的淡；再看它那附了一层软毛的叶子，也是那么不足为奇。它是那样的微小，以至于没有哪种动物会以它作为食物；它是那样普通，以至于没有诗人为它写下一首颂歌。曾记得，有一位植物学家于不经意间给葶苈起了个拉丁名字，但也很快就被人遗忘了。然而，即使葶苈显得多么地不重要，我仍然要说，这个微小的生命扮演了一个出色的角色。

大果橡

当学校的孩子投票评选自己州的州花、州鸟、州树时，与其说他们是在做出某种决定或选择，倒不如说是在对历史的认可。在历史上，当牧场上的草原逐渐普及了南

威斯康辛州时，便决定了大果橡成为了当地的特色树种。这种现象不足为奇，因为只有大果橡是唯一能够面对草原之火而幸存下来的树种。

不知道你是否曾经想过，为什么整株大果橡，包括其最小的枝桠，都被一层厚硬的皮包裹着呢？其实，这层厚硬的皮就是大果橡用来防火的盔甲。当森林和草原展开“地面”的“攻坚战”时，前者必须要面对后者“施放”的火焰。在这种情况下，大果橡便由于自身具备的“盔甲”而成了森林部队的“先头兵”。每年的4月，在青草还未覆盖整个草原之时，草原大火就开始肆虐了。而这时，能逃过一劫的，自然就非大果橡莫属了。放眼望去，大多数由零散的老树构成的小树林，都是由大果橡组成的，这种景致正是拓荒人所说的“大果橡空地”。

对于工程师们而言，这种草原战争往往被忽视；但对于植物学家而言，就显得弥足珍贵，足以让他们研究上万年。在这种战争的记载里，你可以发现埋在泥炭里的花粉粒儿，也可以发现被人久已遗忘的植物体。而根据这些发现，你可以判定森林“部队”有时撤退到苏必利尔湖，有时则大规模向南推进。正因为此，我们不难理解为什么在威斯康辛州南部发现了“云杉”以及其他树种；而且，在这个地区泥炭的某一层中，我们也发现了云杉花粉。从整体情况上来看，森林与草原之间的战争是没有“常胜将军”的，最后的结果只能是互有胜负，不分高下。

之所以出现这种情形，是有其内在缘由的。其中之一就是：有些“同盟者”本来支持这一方；但时间不长，便转而支持另一方。比如说，夏天时兔子和老鼠会美餐绿油油的青草，到了冬天，它们就会啃噬大火中残存的大果橡幼木的树皮；松鼠在秋天时散播大果橡的种子，在其他时间，则会享用这些种子结成的果实；6月份，鳃角金龟的幼虫会侵蚀草原的草皮，但待其成长为成虫后，它就会侵蚀大果橡了——使其叶子纷纷枯萎、凋零。实际上，如果没有这些摇摆不定的“盟友”，那么，在我们今天的版图上，就不会有五彩缤纷、极具装饰美感的草原和林地了。

在这里，卡佛为我们生动描述了人类拓荒居住前草原疆域的图景。1763年10月10日，他造访了蓝丘地区，即丹恩郡西南角附近的一群高耸的山丘（现在这里都已是茂密的森林区了）。他在文章中这样写道：

“我登上了附近一座海拔最高的山岭，居高临下，远眺四周。在数英里的范围内，我只看到为数不多的一些‘干草堆’——那是光秃秃的丘陵，没有几棵树。如果非要说有，那便是几棵山核桃和发育不良的大果橡。”

到了19世纪40年代，一种新的因素“拓荒者”介入到这场“草原战争”中来。也许，就拓荒者的本意来看，他们并没有想到要影响这场战争的进展：他们只是开荒造田。但由此，他们在无意中消灭了草原的老盟友——“火”。于是，大果橡轻而易举地取得了“草原大战”的胜利：把广袤的草原地区变成了自己家的“农场”。这一

点，只要你观察一下威斯康辛州西南部的任何一个“山脊”林场，数一数那儿的树木年轮，就可以得到有力的佐证：在那里，除了少数几棵古树外，几乎所有林木的年龄都可以上溯到19世纪五六十年代。而这个时期正是“草原大火”不再肆虐的时期。

这个树林侵蚀草原疆域、吞噬“大果橡空地”的时期，正是约翰·缪尔在马凯特郡长大成人的时期。他在自己的著作《我的童年和青少年时代》里这样写道：

“在伊利诺斯州和威斯康辛州肥沃的土地上，形成了茂盛的草原。这种情形直接导致了‘草原大火’随时都可能产生；从而，间接导致了森林难以在草原地带上正常存活。所以，如果没有‘草原大火’，我们有理由得出结论：茂密的森林将取代茂盛的草原。因此，在现实世界中，当‘拓荒者’把包括‘大果橡空地’在内的草原开垦种田，在无意中防止了‘草原大火’产生的时候，埋藏于地下的树根便破土而出，茁壮成长了。若干年后，这些地方就形成了茂密的森林。于是，温馨的阳光地带——‘大果橡空地’就这样消失了。”

所以，当你拥有一株古老的大果橡时，你不仅拥有一棵树，而且还拥有了一座历史图书馆，或者“进化剧场”里的一个固定的座位。对于那些细心、具有敏感洞察力的人而言，他们的森林农场其实就是一个贴满“草原大战”徽章和标记的地方。

空中舞蹈

在拥有自己的农场两年后，我发现每年4月、5月的夜晚都能欣赏到森林上方的“空中舞蹈”。而自从有了这个美丽的发现之后，我和家人就再也不想错过这种表演了。

每年的首次“演出”出现在4月份第一个温暖的夜晚，时间是6时50分。从此以后，一直延续到6月1日，且每次演出的时间都会比前一次延迟1分钟。这样，到了最后一次演出时，“舞蹈家”的出场时间便变更为7时50分了。那么，为什么出现这样一种有趣的现象呢？原来，“舞蹈家”对于“演出”的亮度有非常严格的限制——必须维持零点零五英尺烛光的“浪漫”亮度标准。这时，你不需要做什么，只要安静地坐下来，瞪大眼睛就可以了。否则，“舞蹈家”可要怒气冲冲地飞走了呢！

正如出场时间那样，“舞蹈家”对于“舞台”规格也作了严格的要求：舞台必须是树林或者灌木丛中的一个圆形“剧场”——而且，其中心部分应该是一块长有苔藓的地方，或者是一块裸露的沙地，或者是一角光秃的岩石；当然，如果有一条空旷的马路来充当“舞台”，那也是合格的。现在，我们应该说出这些“舞蹈家”的真名实姓了——它们就是公丘鹬。那么，为什么这些公丘鹬喜欢这样的表演“舞台”呢？最初，我对此也深感困惑；但现在，我认为这与它们的腿有关：公丘鹬的腿很短，因此，在茂密的草丛或者杂草中，它们难以神气活现地表现自己；当然，也就无法讨得母丘

鹬的欢心。与周围的农场相比，我的农场中的丘鹬是比较多的。这个原因自然也就很好解释了：在我的农场里，合乎公丘鹬表演的“舞台”比较多——许多地方都是长满苔藓的沙地——这些沙地因其贫瘠，根本长不出草来。

知晓了“舞蹈家”们表演的时间和地点后，我们就坐在“舞台”东边的灌木丛边耐心等候着。然后，在夕阳的映照下，我们会静静地观看公丘鹬的入场仪式。当这些丘鹬从附近的树丛中低掠过来时，我们知道，“舞蹈”的序曲就此开始了：每隔大约两秒钟的时间，丘鹬的喉间就会发出一连串奇怪的“喷嘘”声，就像夜莺在夏日的鸣叫似的。

突然间，公丘鹬停止了这种奇怪的鸣叫。接着，它们盘旋着飞向天空，发出几声悦耳的“啾啾”声。它们越飞越高，身影变得越来越小，但“啾啾”的鸣叫声却显得越来越亮。随后，在事先没有任何征兆的情形下，它们就像一架失灵的飞机一样，笔直地向地面坠下；而在空中，它们给我们留下了一阵轻柔如水的颤音——这声音，简直就让3月的蓝知更鸟嫉妒得要死。在距离地面数英尺的高度，丘鹬们又恢复了水平飞行的姿态，最后慢慢降落到原来的地方——通常情况下，它们返回的位置正是最初自己翩翩起舞的地方。在那里，它们又开始了“啾啾”的鸣叫。

时间过得飞快，不久以后，我们就难以看清楚地面上的丘鹬了。但是，我们可以有足足一小时的时间来欣赏它们在空中的曼妙姿态。通常说来，它们的“舞蹈”时间恰恰是一个小时。但是，在月朗星稀的夜晚，只要月亮婆婆不愿意去休息，我们就可以尽情享受这种独特的“舞台表演”。

伴随着黎明的来临，丘鹬们将会为我们重复一次昨夜的优雅演出。4月份，黎明时刻的第一次演出会在5时15分结束；此后，每一次的“黎明演出”将会提前两分钟落幕。这样，到了6月份最后一次“黎明演出”结束时，时间将定格在3时15分整。那么，为什么会出现这样的情况呢？也许有人说，是浪漫的“舞蹈家”感到越来越疲惫吧；在我看来，这其实只归根于一点：结束“黎明演出”的光亮强度要求只及夜晚开始“空中舞蹈”的1/5；而随着4月份到6月份的时间推移，天亮得愈来愈早了。

也许是一种上帝赐予的幸运吧:无论怎样心无旁骛地观察树林或者草原上的精彩“演出”，我们都难以完全洞悉其中蕴藏的事实真相。拿“空中舞蹈”来说，我至今难以确定母丘鹬们在哪里。如果它们在“空中舞蹈”中也扮演着某种角色，那么，这种角色究竟是什么呢？伴随着丘鹬奇怪的“喷嘘”声，我们往往会看见两只丘鹬同时出现，有时，它们还会一起飞翔，但是，它们却从不一同发出“喷嘘”似的叫声。我不由得纳闷：其中一只是母丘鹬，还是另一只公丘鹬的竞争对手呢？

另一件令我困惑的事情是：丘鹬的“啾啾”声是属于“声带”发声呢，还是一种“机械摩擦”的声音呢？我的朋友比尔·费尼曾经用网子捕获了一只发出“喷嘘”声音的鸟，然后去除了其翅膀最外面的羽毛。自此以后，我们只听过这只鸟发出过“喷嘘”似的叫声和带连续性的颤音，却再也没有听闻它的“啾啾”声。虽然如此，我们

却也不能够基于一次实验而得出什么可靠的结论。

还有一件事情让我难以释怀：究竟到了哪个生理阶段，公丘鹬才会停止自己的“空中舞蹈”呢？我的女儿曾经看见一只公丘鹬在离巢20码处发出“喷嚏”似的叫声，而巢里还放着孵化后的蛋壳。我们不由得想问：这是他和伴侣的家呢，还是他的秘密“情人”的家呢？诸如此类的问题一直困惑着我。而这些问题的答案，正如那渐暗的黄昏一样，始终若隐若现。

其实，每天晚上，数百个农场里都会上演相似的“空中舞蹈”表演。有些农场主人渴望享受一些娱乐性节目，但他们错误地认为只有剧院里面才有自己需要的东西。殊不知，在他们生活的这块土地上，恰恰有他们需要的内容。

丘鹬的存在，对于那些“鸟只不过是人们狩猎的靶子”或者“鸟就应该是人们享用吐司时的佳肴”的观点，无疑是一个有力的反驳。就拿我自己作例子来说：我曾经非常痴迷于猎捕丘鹬。但是，当我发现它们的“空中舞蹈”表演后，我认为猎捕一两只丘鹬就可以了。这样，到了每年的4月份，在日落的天空下，我才不至于因无法看到“舞蹈家”的优雅身姿而懊悔万分。

五月

从阿根廷归来

当蒲公英忙碌着为威斯康辛州的牧场打扮点缀时，我们便知道：5月，已经翩翩走来了。此时此刻，是谁见证了春季那最后的婀娜身影呢？让我们安静下来，坐在温软的草地上，侧耳倾听——当然，这时你要排除草地鹨和红翼歌鸫那喧嚣的干扰。于是，你很自然地就欣赏到了高原鹬的飞翔之歌——它们是刚刚从阿根廷赶回来的。

如果你的视力很好，那么，你可以看到高原鹬展翅翱翔在柔软洁白的云朵之间；而如果你的视力不佳，也不用担心，你只要看看地面上的篱笆桩就可以了——一道银光闪现后，肯定是一只高原鹬亭亭玉立地站在上面。如果你有幸目睹过高原鹬收拢自己美丽的翅膀，那么，你一定会感叹“优雅”这个词汇必然是为此而创造出来的。

那不就是一只高原鹬吗？你看，它正安然地坐在那里，仿佛在用自己的行动告诉你一个不容争辩的事实：这里是我的领地，请其他人等立即离开。按照州郡的法律，这片农场当然是属于你的，但这些高原鹬轻率地就否定了世俗里的事实。在它们眼里，之所以这样做，是有着“充分”的理由的：这些领地的所有权是它们从昨天的印第安人那里继承来的；今天，它们穿山越岭，不远千里来到这里，正是为了证明这一点。所以，在它们离开之前，无论是谁踏入这片土地，都将毫无疑问地遭到它们的抗议。

在我们身边不远的地方，有一只雌性高原鹬正在孵化4个大而尖的卵蛋。不久以

后，这 4 只小高原鹨就会破壳而出了。令人赞叹的是，这些小生命一经诞生就能独立觅食。而且，当身上的绒毛才刚刚干透，它们就在草地上奔跑跳跃了。看它们那种调皮的样子，活脱脱就像一只只踩着高跷的小老鼠似的。这时，你如果打歪主意 —— 想抓住它们，我会老实告诉你，那可是白日做梦。小高原鹨出生 30 天后，就基本“长大成人”了。这种生长速度，在同类当中是非常罕见的。到了 8 月份，新生的高原鹨们已经完全掌握了“飞行”这门看家本领。因此，此时的夜晚，你可以清晰地听到它们发出的出发信号：飞向广袤的阿根廷大草原，去证明南北美洲自古以来就是一个完整的统一体。对于许多政治家而言，地球的统一性是一个崭新的概念，但对于这些“空中飞行部队”而言，完全不是那么一回事。

高原鹨的生存适应能力很强，它们轻而易举地就习惯了在农场中过活。在这里，它们尾随在花色水牛的身后以作必要的防卫。在这个过程中，它们发现花色水牛远比棕色水牛更可靠。和其他鸟类一样，它们也会在牧场和草原上筑巢。但和笨拙的雉不同，它们不会那么轻易地就被刈草者捕捉住。因为，早在草原的草可以收割之前，那些年幼的高原鹨就展翅飞走了。实际上，在广阔的农场地带，高原鹨只有两个真正意义上的敌人：一个是冲蚀沟；一个是排水沟。或许，在未来的某一天，我们会发现这二者也是人类的敌人。

不幸的是，在 20 世纪初，我们的威斯康辛州几乎失去了自太古以来就有的“大自然时钟”。那时，5 月的农场在静寂中独自吐出绿色；而 8 月的夜晚也没有了往日的鹨鸣。于是，没有谁再来提醒我们秋日的脚步已经临近了。可以说，泛滥的枪支一方面带来了后维多利亚时代吐司加高原鹨肉的美味佳肴；一方面给高原鹨种群带来了巨大的伤亡。所以，在这种情况下，联邦候鸟法的出台虽然有些姗姗来迟，但毕竟是一个及时而必要的补救。

六月

河口 —— 一个“垂钓”的好所在

在我们的面前躺着一条河。它不是很深，即便是鳟鱼调皮地拨弄出阵阵涟漪的地方，丘鹬也可以在那里随意漫步；河水也非常温暖，我们可以很舒服地享受一下洗浴的快乐。不过，我们只是不能藉此实现消暑降温的愿望 —— 即使你美美地洗了一个澡，但当穿上高筒靴趟水时，靴子仍然像是热焦油纸那样，灼热难当。

那天傍晚，我们的垂钓结果正如最初的预兆一样，令人失望。本来，我们想着能够抓住几条鳟鱼，但结果除了一条圆鳍雅罗鱼之外，毫无所得。当夜，我们坐在驱蚊的熏火旁，讨论着明天的行动计划。要知道，在这条看似充满希望的河流的诱惑下，我

们在炎热、肮脏的道路上走过了 200 英里的路程。最终，却一无所获。

不过，现在我们清醒过来了：这是一条水文环境比较复杂的河流。在接近河水源头的地方，我们记得有一个狭窄、深邃的河口 —— 这儿的四周，长满了茂盛的桤木。而清冽的泉水就从河口处汩汩流出。在这样的天气状况下，那些备加爱惜自己的鳟鱼会怎么做呢？可以肯定，它们必然游向河水的上游。

于是，第二天一大早，我就迎着清新的空气来到了上游。这时，我身旁伴随的是数百只白喉林莺 —— 它们可能早已忘记了天气不再舒适和凉爽。我爬过缀满露水的河岸，进入了河口。眼前，令人欣喜的是一只鳟鱼正浮出水面，逆流而上。我放出一段钓丝，以让它保持干燥和柔软。然后，在经过几次距离地目测之后，我把钓丝准确地抛在了距鳟鱼最后一次激起水涡的前方 1 英尺处。当然，我不会忘记，在钓钩上，我早已穿好了一只貌似奄奄一息的假蝇鱼饵。此时此刻，兴奋袭上了心头，前几天数百英里的奔波、讨厌的蚊子和圆鳍雅罗鱼，都被我抛到了九霄云外。不久，那只大鳟鱼便一口吞下了我的鱼饵。最后，只好乖乖地躺到铺满桤木叶子的鱼篓里去了。

工夫不大，在旁边的一个水涡里又出现了一只鳟鱼。而且，这一只比刚才的那只还要大些。由此看来，这里真不愧名为“ 航行首发站 ” —— 从地理位置来看，这里地处河口，当然是名副其实的“ 首发站 ”了；但另一方面，从我的收获来说，不也昭示了其重要性吗？抬眼望去，一株棕色的灌木枝干挺立在河水中央。只见它恬静地笑着，还不时摇摆一下身姿，仿佛在取笑那些诱使鳟鱼上钩的蝇鱼饵。

大约有一袋烟的工夫，我静静地坐在河中央的一块岩石上，看着那些可爱的鳟鱼慢慢地从它们的庇身之所 —— 灌木丛里露出头来。这时，我的鱼杆和钓丝早已靠在阳光地带里的桤木上晒干了。但是，为了谨慎起见，我还是决定再观察等待一下：那边的水面非常地平静，一阵微风吹过，浮起了层层涟漪。我想，我必须准确地“ 下钩 ”。也只有这样，我才能捕到更多的鳟鱼。

又一阵风吹过来。这次风力明显地增强了很多，结果把一只棕色的粉蛾从笑盈盈的桤木上吹落下来，无声地跌落在水面上。

可以开始了！我整理好晒干的钓丝，站在河流中央，随时准备着把钓钩甩出。妙

极了！一阵风儿吹了过来——随着风儿，那杨树的枝头也在轻微地抖动着。于是，我放出一半长的钓丝，借助风力轻柔地挥动起来。此刻，太阳在上空明晃晃地照耀着，水面上任何闪动的鱼的影子，都会预示着它的命运已经操纵在我的手中了。风力大了起来，我不再犹豫，把最后的3码钓丝也放了出来，借助着风儿的力量，我把钓钩上面的蝇鱼饵准确而优雅地抛到了仍在微笑的桤木的身旁……很快，鱼儿上钩了！我用力把它从那边的树丛中拖了出来；而它，见事不妙，慌忙向着下游游去，企图突出重围。不过，没过几分钟，它便“老老实实”地“投降”了——只是还不时在鱼篓里抖动几下，表示我不能太亏待它。

当再次晾晒钓竿和钓丝时，我坐在岸边的岩石上，不由得陷入了冥思。我默想着鳟鱼和人的习性，默想着我们与这些生命多么相像：现实中，正如这些鳟鱼所做的那样，人们总是随时准备着，更准确地说，是随时渴望着去抓住外界任何新的有诱惑力的东西；而当最终发现这原来不过是一个骗局时，我们又何尝不是气急败坏、懊恼悔恨呢？不过，虽然如此，我仍然认为这些习性有其好的一面，否则，整个世界都是战战兢兢、慎而又慎，那是何其的乏味与无聊啊！刚才，我在前面曾经说过“为了谨慎起见而怎么样”，但在实际上，我不是想表达字面上的意思，而是要表明一个钓鱼者为了收获丰硕的“果实”积极等待着宝贵机会的到来。

现在，是我应该把握住机会的时候了。要知道，不消多久，鳟鱼将不再浮出水面。于是，我慢慢趟过齐腰深的河水，来到鳟鱼游弋的出发点。这里，长满了密密麻麻的桤木，我只好把头探进树林之中，仔细查看。的确，这里可谓不折不扣的丛林：桤木的叶子交织成了一个密不透风的绿色天棚，而底下，是比较深的河水。在这样的环境下，你根本无法挥动哪怕是蕨类植物的茎干，更遑论是小小的钓竿了。可正是在这里，我发现了一只巨大的鳟鱼：它的肋部正紧偎在河岸边，还不时懒洋洋地挪动着身体，并张口去吸从身边经过的幼小昆虫。

可是，即使可以用那些再普通不过的虫子作为诱饵，我也没有什么机会去靠近这只鳟鱼。不过，当继续前行大约20码后，我却看到了另外一处阳光普照的河面——这里是河流的另一个缺口处。如果用干的蝇鱼饵钓下游的那只鳟鱼，究竟会怎么样呢？这个念头看起来有些不可思议，但我想，我必须这样去做。

于是，我回转身，爬上河岸，再绕过桤木丛林，来到刚才看到的那个缺口处。沿途，我的颈部完全隐入到了凤仙花和荨麻的怀抱中。我狸猫似的蹑手蹑脚前进，以免将鳟鱼的“浴池”搅浑。最后，我站在缺口处，默默地等待了5分钟，让周围的一切重归于平静。接着，我拿出早已预备好的30英尺长的钓丝，给它精心打好油并让其风干，然后卷在左手上。30英尺，这正是桤木丛林和这个河道缺口的距离。

现在，我必须把握住这个胜算不大的机会了。我再次对着干蝇鱼饵吹了口气，让它的翅膀充分鼓胀起来，然后，把它别在钓钩上，放在脚下，使它随着河水向着桤木丛林顺流而去。我随着钓丝，慢慢接近了桤木林；当钓钩进入林中后，我眼睛瞪得更

是浑圆，急切地想知道这种方法是否能取得成功。透过密林中的几点阳光，我瞥见钓钩的顺流还算正常；最后，它终于安全地到达了那只大鳟鱼的身旁。没过多长时间，令我万分高兴的是，大鳟鱼冲向了鱼饵，并咬住了它。于是，一场精彩的战斗就此打响了。

按常理来讲，一个谨慎的垂钓者是不会冒着失去钓钩和钓丝的危险而去捕捉密林中的鱼儿的。但是，正如我前面所言，一个过于谨慎的垂钓者是不会成为一个真正的渔夫的。现在，我经过多次小心翼翼的摆脱茂密丛林的纠缠，终于把鱼儿拉到了宽敞无堵的河面上来，获得了完美的成功。

不过我应该坦诚一点：这 3 条鳟鱼并不是很大的那种，我不需要将它们砍头去尾就可以塞进锅里去。我想，真正巨大的，是我此行的收获；不是鱼篓的收获，而是留给我脑海的记忆。其他的，正如白喉林莺的健忘一样，我早已把它们扔到爪哇国里去了。

七月

巨额的财富

根据州郡里的书记员的记载，我拥有着 120 英亩的土地。但你知道，那个家伙是个十足的懒虫。在九点之前，他是绝对不会睁开惺忪的睡眼的。因此，对于破晓时分我的农场里究竟发生了什么事情，他根本是一无所知的。而这，才正是我最为珍惜的宝贵财富。

无论州郡的法律有无记载，我和爱犬都十分清楚：破晓时分农场上的宝贵财富只属于我们自己。那时，漫步于天地之间，我只感觉到没有了地域的限制和世俗的束缚；而法律文书或者契据所不能涵盖的内容，这时也被我们一览无余。不过，早已不被人熟知的孤独感，此刻四处蔓延开来，只要是露珠所及的地方，都有它的身影。

就像其他的大农场主一样，我也拥有自己的佃农。虽然他们会时常忘记交纳租物，但对于土地的使用权却一点也不马虎。从 4 月份到 7 月份，天刚刚放亮，这些佃农就用自己的行动证明自己所有的劳动领地。藉此，他们便可以证明与我存在着事实上的雇佣关系。

与你的设想可能相反的是，每天农场里的晨礼是非常繁杂的。而我也弄不清楚究竟是哪位高人定下了这样一套规矩。清晨 3 点 30 分，我会庄严地准时走出房门，手里是两个象征主人身份的物件：咖啡壶和笔记本。我来到附近的一条长椅旁，面对苍茫的晨曦坐下，随手把咖啡壶放在脚边。接着，我便从上衣的胸兜处掏出一只茶杯来 —— 但愿不会有人注意到这个不登大雅之堂的举动。然后，我掏出怀表看看

时间，慢慢倒出一杯咖啡，并将笔记本放在膝上。这时候，内容丰富的晨礼也就宣告开始了。

3点35分，在距离我最近的地方，一只麻雀用清晰的男高音率先宣告自己拥有北至河岸、南到旧马车道的北美短叶松林。接着，在听力所及的范围内，麻雀们此伏彼起地吟唱起来：纷纷宣称自己对某块领地拥有所有权。不过，它们没有发生任何不愉快的争吵——至少此刻是没有。所以，我可以非常惬意地倾听着，同时，心里也默默祝福它们的伴侣不会给它们施加额外的压力。

就在麻雀们的叫声仍在余音袅袅的时候，栖息在榆树上的知更鸟已经用动听的颤音表明了自己对于脚下树桩的所有权，看它那迫切的神态，好像对于曾被冰雹打断的树枝惋惜不已。当然，在它的眼睛里，除此以外周围的其他附属物品也是其固有的财产。（我这么说的意思其实就是指，树下那片不很宽广的草坪里的蚯蚓，也是它的奴仆。）

一会儿，知更鸟固执的发言惊醒了睡梦中的黄鹂。于是，它也行动起来。准备好发言稿之后，它便对世界宣布那根被冰雹打落的枝干已经成为了其私有财产。另外，附近所有含纤维的马利筋茎、花园里所有松软的卷须，以及那灿烂的阳光，都应收归其名下。

现在，怀表的指针定位在了3点50分。山丘上，靛蓝白颊鸟不甘落后地宣布1936年大旱后枯死的橡木归它所有。当然，它的胃口还包括了附近各种昆虫和灌木丛。而且有一点，虽然它没有明说，但我可以感觉得到：它认为自己比任何蓝色鸟儿或者迎接黎明的紫露草蓝得更出色。

这时，有一只鹪鹩从屋檐的缝隙中钻出来，兴冲冲唱起了歌儿。在它的带动下，又有好几个同伴也加入了进来。于是，刹那之间，整个农场好像沸腾了。蜡嘴雀、鹀鸟、黄色林莺、蓝知更鸟、绿鹃、红眼雀、主红雀……所有的鸟儿都展开了一场歌咏大赛。身临其境的我，试图用演唱的先后时间为它们排好次序，但不久，我发现这简直就是白费力气——我早已分不清楚究竟是哪只鸟儿最先放开了歌喉。不觉间，我的咖啡壶已经空空如也了；而太阳，却已渐渐升起。现在，到了马上巡视一遍农场的时间了，我急忙站了起来。

我和爱犬，神采奕奕地向前走着。我知道，对于爱犬来说，它是不会在意这些歌声的。因为，它习惯于用自己的嗅觉找到一切问题的答案——自然，在寻找佃农时，它也是这么做的。现在，爱犬决定用自己的独特本领向我揭示：夏日的夜晚，动物们都做了怎样的得意之作。结果，出乎我的意料的是，我们发现了一只正要仓皇出逃的兔子、一只拍动翅膀表示友好的丘鹬和一只因在草地上弄湿了羽毛而懊恼的公雉。

另外，在早晨巡视的路途中，我们还偶尔发现过一只因在夜晚猎食而迟归的浣熊和水貂，以及一次当我们赶走了一只正在捕鱼的苍鹭后，却无意中惊吓了一只带着子女、兴冲冲前往雨久花遮蔽处的雌性林鸳鸯。当然，在幸运的场合中，比较常见的景

象是鹿儿踱着方步回到长满了紫苜蓿、婆婆纳和野莴苣的树丛里。不过，在大多数的情况下，我们并不是都能很幸运地看到那些生命，而只不过是在丝绸般的露水里，由懒洋洋的动物的蹄子所践踏出来的黑色印痕。

终于，太阳完全升起来了，鸟儿的声音也变得若有若无。这时，一阵牛铃的“丁当”声自远处传来，说明一群牛儿正在向着牧场进发；附近也响起了牵引车的吼叫声，让我们知晓邻居也起来了。不言自明，一切都又回到了州郡书记员所知道的那种按部就班的状态。于是，我们便转身回去——到了该吃早餐的时间了。

草原诞辰

从4月份到9月份，在这儿的草原上，平均每个星期都会有10种野生植物吐出新年的第一朵花蕾。不过，在6月份的某一天，你可能会发现多达11种植物同时绽放。我知道，对于普通人来说，他们是不可能细微地观察到这种现象的；不过，要说人们毫无所知，那也是不符合实际情况的。换句话来说，脚踩5月的蒲公英而浑然未觉的人，可能对于8月猪草的花粉情有独钟；忽略4月榆树红雾般花蕾的人，可能在6月梓树飘落的花冠前驻足良久。如果你告诉我某个人对某种植物特别感兴趣，那么，我就可以判断出他的职业、嗜好、是否患有花粉热以及生态知识的水平。

每年的7月份，当我往返于城市与牧场之间时，总会急切地想看到其间的一处乡间墓地。而这个时候，也就到了草原庆祝诞辰的时刻了。我还注意到，在这个墓地的一角，住着一位主持宗教仪式的神父，他该是许多重要“事件”的见证者吧。

这个墓地，其实很是普通。其间，栽满了云杉，并以粉红色花岗岩或者白色大理石的墓碑作为点缀。每个礼拜天，这些墓碑前总会有一些红色或者粉色的天竺葵，表达着亲人对于死者的怀念和哀思。要说墓地不寻常的地方，那就是它是三角形的，而不是通常所见的四边形；此外，在墓地篱笆的拐角处，依稀可以分辨出往日草原的遗迹。1840年，人们在脚下的这片草原上建造了这块墓地，从而在镰刀和除草机的戕戮下幸运地保留了一处原始州郡的影子：每年的7月，这里都会长出和人一样高的裂叶翅果菊——上面闪耀着碟子大小、向日葵般的黄花。在所经过的整条马路两边，更准确地说，是在整个州郡的西部，我们只有在此才能寻找到这种珍贵的植物。我不禁想：如果有1000亩的裂叶翅果菊盛开在你面前，花朵轻触着那水牛的大肚皮，会是怎样一个壮丽的景观呢？可惜，现在已经没有人能够回答——甚至是提出——这个问题了。

今年，我发现裂叶翅果菊的首次开花时间是在7月24日，这整整比往常推迟了一个多星期——要知道，在过去的6年中，它的平均首次开花日期是在7月15日。

8月3日，当我再次经过墓地时，一队修路人员已经拆掉了它的篱笆，割断了裂叶翅果菊的茎干。现在，我可以遗憾地预见到：在不久的未来，裂叶翅果菊将和除草机展开数年但徒然的“斗争”，最终挣扎着死去。那时，草原时代也就宣告永远结束了。

根据公路局的人员调查，每年夏天的3个月份里——也就是裂叶翅果菊盛开的时节，墓地旁边的公路上会有大约10万辆车子驶过。而我想，在这10万辆车子里，将会有不下10万人接受过历史知识的教育；不下25000人接受过植物学知识的熏陶。不过，我不敢保证会有那么十几个人注意到裂叶翅果菊无助地死去。如果我对附近教堂的牧师们说，修路人员正在以割除杂草的名义销毁墓地里的“历史材料”，那么，他们也一定深感诧异——我的话究竟是什么意思呢？

其实，这算得上是当地植物群落葬礼的一个缩影——也可以说是世界植物群落葬礼的一个缩影。沉醉于现代化物质文明的人们，在任意改造我们的地球时，深感骄傲和自豪，却不幸忽视了自己赖以生存的生物圈系统。我想，如果人类足够“明智”的话，不如马上停止一切关于“植物学”和“历史学”知识的教育。这样，当我们的后代享受美好生活的同时，可以不必为那些死去的生命而自责。

从经济发展情况来说，一般情况下，当农场周围的植物群落凋零时，这个农场便是“发达”地区。可是，我之所以选择了现在的地方作为自己的农场，恰是因为它的不“发达”：这里没有公路等现代化设施，看上去也非常落后。直到现在，我仍然使用着“拓荒者”所走的古道——上面既没有被平整过，也没有铺上碎石。的确，我的农场和“发达”的调子是格格不入的。与我乐于享受“清福”不同，我的邻居经常去州郡的书记员那里抱怨：他们的树篱已经好几年没有修剪了；沼泽地还没有筑上堤防，也没有排过水。其实，我知道，在享受“垂钓”与“发达”二者之间，他们还是钟情于前者的。正是基于这种信念，每当周末时，我就会来到偏远的农场，尽情领会作为一个植物爱好者的快乐；而在工作日的时候，我也会尽可能地来到大学校园、大学农场和附近的郊区，与那些植物精灵们共度时光。有那么10年的时间，作为消遣，我把大学、城市近郊与偏远农场里植物首次开花的情况做了一个有趣的记录：

植物首次开花月份	郊区和校园	偏远农场
4月	14	26
5月	29	59
6月	43	70
7月	25	56
8月	9	14
9月	0	1
合计	120	226

从上面的统计数字我们可以非常容易地得出结论：在偏远的农场里生活的农夫与在大学和城市生活的人们相比，可以欣赏到两倍的植物种类。虽然如此，但我要说，他们都没有领会到完整的植物部落风景。正是从这个意义上说，我们面临着两个前面已叙及的选择：要么让大家接受“愚民”教育，要么重新思考社会发展和植物保护相统一的可能性。

众所周知，造成植物群落萎缩的原因无外乎三个：经营无杂草农场、林地放牧和修筑道路。我们也知道，为了社会的发展而进行适当的改造是完全必要的。但是，我们必须坚持一点：野生植物的用地缩减应当是适度与合理的。我们完全没有必要拿整个农场、整个城镇或者整个州郡的植物生命作为社会发展的代价。否则，我们必将遭到自然的惩罚。其实，在每一个农场里、每一条道路两旁，都有许多空地可以利用。我们应该把牛、犁以及刈草者等这些植物的大敌从这些空地里驱赶出去。这样，当地整个植物群落加上外来的数十种不同名字的“侨胞”，就可以与我们长相厮守了。

然而，具有讽刺意味的是：那些草原植物群落的“杰出保护者”——那些用栅栏将铁路用地围起来的铁路公司，对上述常识懵懂无知，而且毫不关心。这些栅栏大部分是在草原被犁耕之前就已经安置好了。在这些细长的“保护区”内，植物“战士”们不顾煤渣、煤灰和每年一度大火的考验，用自己顽强的生命力续写了一本彩色的年历：从 5 月粉红的折瓣花到 10 月蓝色的紫苑。长期以来，我一直志愿找一位“无情”的铁路公司总裁，去唤醒他那内心深处的“仁慈”，但一直没有取得成功。

我知道，为了清除铁轨附近的野草，铁路公司一直使用喷火器和化学药剂喷洒器。但是，这种手段的成本无疑是很高昂的，所以也就无法扩展到距离铁轨较远的地带。我想，早晚他们会采用更完善的手段和措施的。

如果对于一个人种所知甚少，那么，当他们在世界上消失时，我们是不会悲痛的。换句话说，我们只会为所熟悉者哀伤。因此，当我们对于裂叶翅果菊的认知仅仅局限于植物学书籍上的一个名字时，是不会为了它自丹恩郡西部的灭绝而扼腕长叹的。

当我试图挖起一棵裂叶翅果菊，好把它栽植到我的农场时，我才生平第一次发现了这个小生命的性格：对于它的挖掘工作，就像是在砍伐橡木一样——我辛苦了半个多小时，全身弄得脏兮兮的，但它的根依然固执地蜿蜒于地下深处，活像一株直立的巨大甘薯。挖掘到后来，我才惊讶地发现：它的根早已向下穿透了厚厚的岩石。至此，我只好作罢了。不过，我也弄明白了，为了挨过大草原上的干旱，它必须如此。

为了达成最初的心愿，我决定播下裂叶翅果菊的种子——它的种子大而多肉，品尝起来就像是葵花子一样。不久以后，种子发芽了！然而，从那以后，我一直等了 5 年，幼苗仍未成熟——还没有长出开花的茎干。我想，也许要经过 10 年，它才能达到开花的阶段吧。根据这个道理，我不由地倒吸一口冷气：墓地里的裂叶翅果菊该有多大年纪了啊？它可能比最老的墓碑还要老吧——要知道，首块墓碑是在 1850 年立起来的呀。从这个时间推测下去，我想它肯定看到过逃亡的“黑鹰”从麦迪逊的湖泊

撤退到威斯康辛河；而当地一连串的拓荒者的葬礼也必然被它尽收眼底。

一次偶然的机会，我看见一把电动铲在挖掘路边的排水沟时切断了裂叶翅果菊的根。很快，它的根便冒出了新叶，直至最后长出了花茎。这种现象恰好充分解释了一个事实：一旦裂叶翅果菊在一个地方扎根生活，那么，对于持续性放牧、刈草和犁耕以外的伤害，它完全抵抗得住。

可是为什么裂叶翅果菊会在放养奶牛的草原消逝呢？为此，我专门做了观察：一位农夫牵着一头奶牛，来到一块原先只供偶尔刈取饲料的草地上。结果，在吃其他的植物之前，这头牛就把裂叶翅果菊美餐了一顿。我们可以设想，对于水牛这种不常光顾一块草皮的动物——它是不会甘愿在一块草地上进食的，裂叶翅果菊还是能够招架的，但对于整天在一处地方享用的奶牛来说，它是无论如何也不能幸免的。

昨天，上帝的仁慈使得数千种生物互生互克，从而构成了现实的世界；今天，上帝正在收回这份仁慈，于是，最后一头水牛离开了威斯康辛州，接着，最后一株裂叶翅果菊也离开了我们。而人类，是否为此而叹息觉醒呢？

八月

青青河边草

多数名画之所以有名，就是因为它们经得起时间的考验，为几代人所欣赏。

然而，我却知道有这样一幅极易消逝的名画：它存在于这个世界上的时间是如此地短暂，以至于除了在丛林中漫游的鹿儿外，几乎没有人看到过它——是大自然创造了如此的奇迹，而挥笔作画的是一条充满了灵性的河流。在我带朋友来欣赏这幅美丽的画卷之前，它就从我们的视野中永远地消失了。此后，这幅画就只存在于我的心灵之中了。

像其他的艺术家一样，这条河流也是率性而为的。你无法预知她何时有作画的兴致，也无法预知这种兴致会持续多久。但在仲夏之际，当白色舰队般的云朵游弋于天空之际，漫步于沙洲之上，观看她是否正在作画，将会让你觉得不虚此行。

在开始作画之时，她会先在裸露出的沙滩上薄薄地画上一层淤泥的缎带。而当这条缎带在太阳的照射下逐渐变得干燥时，金翅会在她的池塘里洗澡；小鹿、苍鹭、浣熊还有乌龟，则会用它们的足迹为这幅画卷镶上美丽的花边。在这个阶段，我们还看不出接下来她将会画些什么。

但是，当我看到这条缎带因为长出荸荠而变得翠绿时，我便会专心地等待，因为这就是她正有作画兴致的信号。几乎是在一夜之间，这里就变成了一片草地，这片草地是如此的茂密青翠，以至于邻近高地上的田鼠也抵抗不了她的诱惑而来到这里。在

晚间，它们热衷于在这片天鹅绒般的草地中松弛自己的身体，因此在这片草地上形成了一个整齐的“鼠迹迷宫”。小鹿们在草地上来回走动，显然只是为了享受脚下那愉悦的感觉。即使是最不爱出门的鼹鼠，也在沙洲下挖了一条通往这片青草地的地道，在这里，它们可以尽情地做自己喜欢做的事情——使翠绿的草皮一堆堆地隆起。

在这个阶段，无数小得无法辨认的幼苗，从这片青草地下温暖而潮湿的沙土中破土而出。

如果你想进一步欣赏这幅美丽的画卷，就需要再给她 3 个星期左右的创作时间。然后在某个明亮的清晨，天空刚刚破晓之时，再次造访这片沙洲。你就会发现，这位艺术家已经完成了她的大作，并用清晨的露水滋润着一幅这样美丽的画卷：在比以往任何时候都要翠绿的草地上，闪耀着蓝色的沟酸浆、粉红色的青兰，以及乳白色的慈姑花；四处都有山梗菜朝天空掷出的红矛；紫色的斑鸠菊和粉红色的沼泽兰静静地站立在沙洲尽头成排的柳树旁。哪怕你怀着安静而谦卑的心情来这里欣赏，你依然有可能惊动一只狐红色的、只有你膝盖般高的可爱的小鹿。

不要想着再来欣赏这片青草地了，因为它很快就消失不见了。不是河水的消退使它干枯，就是河水的高涨冲洗了这片沙洲，总之，它会再次变成原来那片朴素、干净的沙地。但是，你可以在心中永远地挂起这幅画卷，并期待着未来的某个夏日美丽将再次出现。

九月

灌木丛中的合唱

9 月，天空破晓之时，你几乎听不到鸟儿们的歌唱。也许，你会听到一只麻雀百无聊赖的歌声；也许，你会听到一只啄木鸟在飞往它日间的树丛时盘旋于你头顶上的鸣叫；也许，你会听见一只猫头鹰用来结束晚间丛林中争吵的啼叫。但是，多数的鸟儿似乎没有合唱的兴致。

只有在某些多雾的秋日黎明，你才能听到鹌鹑们的合唱。寂静的丛林中突然响起十来个女低音，那是鹌鹑们再也抑制不住它们对于即将到来的黎明的赞美之情而放声的歌唱。然而，仅仅在一两分钟之后，就像它突然开始的那样，合唱戛然而止。

藏在暗处的鸟儿的歌声有一种特殊的优点，这种优点使它们的歌声很容易被人们所牢记。在树梢上唱歌的鸟儿易被人们发现，同样也容易被人们遗忘。处于明处的事物都有一种平凡性。而为人们所牢记的，是看不见踪影的画眉鸟从阴暗处倾泻出来的银铃般的合音；是藏在云层中高飞的鹤发出的小号般的鸣叫；是草原上的榛鸡在浓雾中发出的低沉的叫声；是鹌鹑在黎明前寂静中的歌唱。没有哪一个观察家曾经看到过

这个合唱团的演唱，因为它们隐藏在草丛中那看不见的鸟巢里，一旦有人接近，它们就自动寂静下来。

6月，当光线的强度达到零点零一烛光的强度时。我们完全可以确信，知更鸟将会开始歌唱，其他的鸟儿则会按照一定的顺序陆续加入这个大合唱。然而，在秋天时，知更鸟则是沉默的，我们也就无法预知鸟群是否会像以前那样合唱。在那些静寂的清晨里，我感到十分的沮丧。这或许说明了人们期望得到的，总是比他可以得到的更有价值。而倾听鹌鹑合唱的愿望，使我在无数黑暗的清晨中早早地起床。

秋天的时候，农场里总会有一群或者数群的鸟儿，但破晓时的合唱则通常是从远方传来。我想这是因为鸟儿们总是希望尽可能地远离农场中的猎狗，这些猎狗对于鹌鹑的兴趣，甚至比我更为强烈。然而，10月的一个清晨，当我正在户外的火炉旁喝着咖啡的时候，悦耳的合唱声就在我身边的不远处响起。

听着这几乎就在我们台阶旁的黎明颂歌，我感到万分的荣幸。不知是什么原因，我一下子觉得，那些松树的绿色针叶似乎更绿了，而那些松树下的红色地毯式的悬钩子，也似乎更为鲜红了。

十月

暗金色

一般来讲，狩猎方式有两种：普通狩猎和猎捕有环状羽毛的松鸡。

猎松鸡有两种去处：一是随便一个地方；二是亚当斯郡。

而在亚当斯郡捕猎也有两种时间：一是随便什么时候；二是当美洲落叶松变成暗金色的时候。不过，这是那些运气不佳者的写照。他们从头忙到尾，一刻也不闲着。子弹用光了，却只能目瞪口呆地望着金色的针叶从树上纷纷落下。而抖落这些叶子的“罪魁祸首”却毫发无损地钻进了短叶松里。

当初降的霜冻将丘鹬、狐色带和灯草从寒冷的北方带到此地时，美洲落叶松正在由绿变黄。知更鸟正从多花木中搜集最后的白色浆果，留下了在山丘的映衬下如粉红色雾霭的空心树干。小溪边的桤木，叶子全都凋零了，从而能使人们饱览散布各处的冬青树。悬钩子在太阳的照耀下红得发亮，恰巧照亮了你找寻松鸡的道路。

猎狗比你更了解松鸡的藏身处。你只要紧紧地跟着猎狗就可以了。从它那竖起的耳朵，你甚至能猜出风儿都告诉了它什么故事。当最后猎狗停在那里纹丝不动时，它会用眼神提示你，“嘘，开始准备。”但问题是，准备做什么呢？是准备猎捕一只唧唧喳喳的丘鹬、一只引亢高歌的松鸡、还是一只兔子？其实，猎捕松鸡最大的价值和快乐也就是浓缩于什么都不确定的那一刻。那些坚持必须事先准备好才能去打猎的人，

最好还是去捕野鸡。

狩猎的情趣因人而异，而造成这种差别的原因又很微妙。最美妙的狩猎要算是“偷”来的。为了偷得一次狩猎，你要么需要到从来没有人去过的荒山野岭，要么需要特别留意别人视若无睹的地方。

很少有猎人知道亚当斯郡有松鸡。因为当他们开车穿过该郡时，他们眼里充斥的都是没有用的短叶松和矮小的橡树。而这又是因为被高速公路分成若干部分的向西流淌的溪流，每一条都是从一个沼泽地起源，流经干旱的沙漠地带，最后注入大海。很自然，这些向北延伸的高速公路也随之穿进了没有林泽的不毛之地。然而，就在高速公路的另一边，在屏障般的旱生灌木背后，每一条小溪都扩展成宽广的林泽缎带。就是这里，成了松鸡们的天堂。

而也就是在这里，每年的10月份，我孤独地坐在美洲落叶松之间，听着一波波载着猎人的汽车从高速公路上呼啸而过，一意孤行地朝着早已拥满猎人的北部村郡进发。想像着他们将车开足马力、一脸的严肃以及迫不及待的眼睛紧盯着北方地平线的样子，我就暗自发笑。一只雄松鸡听到他们路过此地的噪音，也用力地扇动翅膀以示它的轻蔑。而它这一扇不要紧，我的猎狗立刻注意到了它。该轮到猎狗得意地笑了。看来，那只松鸡该活动活动了，我们呆会儿就要去捕它了。

美洲落叶松不但生长在林泽周围，也生长在毗邻高地的山脚下，那里到处都有泉水涌出。不过每年春天泉眼会被苔藓堵塞，形成一个沼泽台地。我称这些沼泽台地为空中花园，因为裂龙胆已从潮湿的泥地中高擎起蓝宝石般的花朵。这时，即便猎狗示意你松鸡就在眼前，你也会无动于衷。因为这样一株披着美洲落叶松金黄色针叶的蓝宝石般的裂龙胆，足足可以让你驻足凝视良久。

在每一个空中花园和每一条小溪之间，你会发现鹿儿踩踏出来的覆盖着苔藓的小径。猎人可以很方便地跟进，被惊动的松鸡也可在霎时间越过它。但问题是，行动更迅捷的到底是松鸡还是猎枪？如果是松鸡，那么下一个路经此地的鹿会发现两个令它鄙夷不屑的空弹壳，而不是松鸡的羽毛。

沿着溪流往上走，我遇到了一个废弃的农场。我试图从贯穿其中的短叶松的年龄来判断：到底是多少年前，那些运气不好的农夫鲁莽地断定这片沙土平原只能出产孤寂，而不能盛产谷物。如果不留心观察，你可能会被短叶松的“大话”唬住。因为每年它们并非长好几轮新枝叶，而是只长一轮。后来，我在一棵如今堵住了谷仓大门的榆树幼木上发现了一个更好的“记时器”。它的年轮能上溯到1930年大干旱时期。从那以后，就再也没有人能从这个谷仓中取出粮食了。

我想知道当这个农家的生产投入超过谷物产出从而不得不离开这个贫瘠之地时，他们都曾权衡考虑过什么。毫无疑问，他们曾考虑再三，但大多数的想法都像飞过的松鸡那样无迹可循。只有一些思绪历经几十年仍能找寻到蛛丝马迹。原来，不知具体是哪年的4月，男主人种下了一株紫丁香。他肯定在愉快地憧憬，以后每年4月紫丁

香都会美丽地绽放。而女主人使用的搓衣板，因成年累月地在星期一摩擦而快被磨平，肯定是希望星期一能永远在地球上消失。

在考虑这些问题的时候，我发觉在这么长时间里，我的猎狗一直耐心地等在泉水边，指示着猎物的方向。于是，我走上前去，为我的漫不经心道歉。上空有一只像蝙蝠一样的丘鹬鸣啭盘旋，红色的胸脯沐浴在 10 月的阳光下。打猎于是就这样开始了。

但是，一个人在这样的时间和这样的地点打猎，很难完全把精力集中在松鸡上，因为周围有太多太多的诱惑。我在沙地上发现了雄鹿踏出的脚印，于是便带着慵懒的好奇心追踪下去。脚印一直从一个泽西茶丛钻到另一个泽西茶丛。从散落在地上的被咬过的细枝就可看出这一点。

而那些被咬过的细枝也提醒我，该吃午餐了。然而，我刚刚从口袋中取出午饭，就看到一只鹰在高高的头顶上空盘旋。我一时辨别不出它的种属，定睛看了一会儿，才看到它的红尾巴。

然后我又去拿午饭，结果这次是一株树皮已剥落的鹅掌楸吸引了我的眼球。再仔细看，我判断一只雄鹿曾在此地蹭掉了它鹿茸上发痒的绒毛状皮。那么，这是多久之前的事呢？从暴露在外的树皮早已变成棕色来看，我猜想现在那只雄鹿的鹿角肯定是光滑的了。

于是我再次准备拿出午餐来吃。但是又被一阵兴奋的狗叫和沼泽地中灌木的“ 咔嚓 ”声吸引走了注意力。一只雄鹿从灌木丛中跃出，茸尾高高举着，鹿角在太阳的照射下熠熠发光，全身的毛蓝得发亮。看来，我上面的猜想是正确的。

我满意地拿出午饭，这次总算是能顺利地开吃了。这时，一只山雀注视着我，很纳闷为什么它对午餐吃什么那么保密，而我却毫不在意地公之于众。但是，尽管山雀不告诉我它都吃些什么，我却能猜得到。也许是冰凉肿胀的蚂蚁卵，也许是在鸟类看来相当于冰冷烤松鸡的东西。

吃完午饭，我又观看了美洲落叶松幼木排列有序的方阵。金黄色的针叶直直地刺向天空。每棵树的下面，前日凋落的针叶铺成了一条暗金色的地毯；而每棵树的顶端新发的嫩芽正在等待下一个春天的到来。

起得太早

对于角、星星、雁和货运火车而言，起得太早是一种“ 恶习 ”。一些猎人从雁群那里学来了这种“ 恶习 ”，咖啡壶又从猎人那里沿袭了这种“ 恶习 ”。说来奇怪，在所有必须在早晨某个时刻起床的芸芸众生当中，只有少数几个人能发现这个最愉悦而又最清闲的起床时刻。

我想，猎户座一定是那群习惯早起者的“ 始作俑者 ”。因为它是天空中最早升起的信号灯。当它穿过西边天穹的最高峰时，一个人足可以猎起一只小野鸭，并把它带走。

早起者通常相安无事，这也许是因为他们和晚睡晚起者不同，他们习惯于对自己的成就轻描淡写。比如说，猎户座是一天中运行范围最广的，但它对此始终保持缄默。咖啡壶，从它第一刻汩汩作响起，就对自己腹中正在煮沸的东西的优点保持低调。猫头鹰则用仅有三个音节的评论淡化了它在夜间行动的传奇故事。沙洲上的雁，伴随一种别人无法听懂的辩论，简洁明快而又秩序井然地飞起，对它在远山和海洋中树立起的权威没有留下丝毫暗示。

而货运火车，我不得不承认，它无法对自己的重要性保持沉默。即便如此，它也有着自己独特风格的谦逊。它的眼睛只注视着自己那种不得不发出噪音的工作，它不会轰隆隆地擅闯他人的营地。因此，对于这种思维单纯而专心不二的货运火车，我有一种深深的安全感。

太早来到沼泽是一种纯粹听觉上的体验和享受。在万籁俱寂的夜间，你的耳朵对于任何响动都会有十分清晰甚至是夸大的辨识，完全不会受到任何阻碍。当你听到一只绿头鸭面对美食发出的狂热叫声时，你可以恣意想像有 20 只鸭子在浮萍之间豪饮。当你听到一只赤颈鸢发出刺耳尖叫时，你就可以假定有一个中队的赤颈鸢，完全不用担心这与实际会有很大的出入。而当你觉得有一群铃鸢，正瞄准一个池塘，用长长的垂直俯冲撕裂灰暗的天空幕布时，你会屏气凝神，但当你想看得更真切时，你会发现除了星星什么都没有。然而，同样的场景如果是放在白天，就不一定只是看看而已了，你也许会开枪射击，但当失败之后，会匆忙找一个托词来自圆其说。同时，如果是在白天，你的思绪也不会长上想像的翅膀，不会将苍穹想像成不同的两半。

当飞禽悄无声息地向更宽阔更安全的水域飞走，每一群都在灰白的东方变成一个点时，聆听的好时光也就结束了。

像其他许多限制性条约一样，只有当黑暗使傲慢之辈变得谦虚时，黎明前的约定才能继续生效。看起来太阳仿佛要为世界上一切在白天默默撤退的万事万物负责。无论如何，当低洼地区的雾霭转为白色时，每一只公鸡都在肆无忌惮地自吹自擂；每一株玉米秆都自认为比其他的玉米秆要高出一倍。太阳升起的时候，每一只松鼠都在那里想像并夸大着它曾受过什么样的屈辱，每张嘴都故作激动地宣告自己此刻所发现的其实是想像中的社会危机。远处的乌鸦也在责骂一只假想的猫头鹰，它想告诉世界乌鸦家族是多么的警觉。一只或许沉浸在往日风流快活日子里的野鸡，正用力拍打着翅膀，它用沙哑的声音警告这个世界，它是这片沼泽地的主人，它拥有这片土地上的所有母鸡。

但是，并非只有鸟类和兽类才享有这一切想像中的辉煌。早餐时间，醒来的农家小院里，充斥着汽车喇叭声、号角声、吆喝声和吹哨声。到了晚上，也许只有一个忘了关的收音机在嗡嗡作响。所有的人都上床睡觉了，继续领教夜晚的功课。

红灯笼

猎获鹌鹑的一种方法是，根据逻辑和概率，对即将去行猎的地形制定一个周密的计划。这个计划将指引你去鹌鹑会去的地方。

另一种方法就是，毫无目的的从一个红灯笼漫游到另一个红灯笼。这也有可能带你找到鹌鹑会出没的地方。而这里说的红灯笼指的是在 10 月阳光的照射下变成红色的黑莓的叶子。

红灯笼曾经很多次地在很多地方为我照亮狩猎的道路。但是我认为黑莓首次学会让叶子变红是在威斯康辛州中部的沙郡。在那片友善的荒地里，有几条类似小沼泽的溪流。很少能将灯点燃的穷人们称这片土地为不毛之地。但是他们没有意识到，从第一次霜降到冬季的最后一天，每一个太阳高照的日子，黑莓的叶子都像火一般的红艳。每一只丘鹬和鹌鹑都能在这片灌木林中拥有属于自己的日光浴室。但是，大多数的猎人并不知道这些，他们总是在没有荆棘和灌木的树林中逡巡，结果总是疲惫不堪地空手而归。这样也好，“ 我们 ” 就能继续安静地过日子。

这里的“ 我们 ”指的是鸟、溪流、猎狗和我。溪流算不上勤劳，它慵懒依恋地围着桤木蜿蜒前行，仿佛宁愿呆在原地也不愿奔向大海。如果换成我，也会是那样。它的每一个由于踌躇不决而形成的急转弯都能形成更多的溪岸。在那里，山腰上的荆棘灌木毗连着沼泽深处一簇簇冻僵的蕨类植物和宝石草。没有一只鹌鹑愿意长时间地离开这个地方，我也是。因此，猎鹌鹑就成了逆着风沿着溪边从一处灌木到另一处灌木漫步的举手之劳。

猎狗每到一处灌木丛的时候，都要回头看看我是否在能保证精确射击的范围之内。如果可以保证，它就会非常谨慎小心地继续前进，湿润的鼻子会从上百种气味中过滤出唯一想要的那种。这时候，这种动作背后所隐藏的整个地景的生命和意义就依稀可感了。猎狗是空气气味的勘探者，永远搜寻着对它而言是嗅觉黄金的东西。鹌鹑的气味正是将它的世界与我的世界连在一起的枢纽。

顺便需要提及的是，我的猎狗认为，对于鹌鹑我还有很多需要了解的地方。从专业的自然学家的角度看，这一点是正确的。猎狗凭借“ 逻辑学教授 ” 的冷静和耐心，孜孜不倦地教导我如何从训练有素的鼻子里进行正确的推导。我很高兴它能从一些对它而言显而易见、对我而言却很玄妙的东西中得出某个结论。或许猎狗很希望它的这个笨学生将来有一天能学会像它那样闻气味。

像其他的笨学生一样，我能判断“ 教授 ”什么时候是正确的，尽管我不明白到底是为什么。当猎狗发现某个线索的时候，我会检查枪支随后跟进。同时，就像任何一个好教授一样，我打不中猎物的时候（这种情况经常发生），猎狗从来不嘲弄我。它只是看我一眼，便继续沿着溪流，找寻下一个鹌鹑。

沿着这些溪岸走，你会跨越两种地景。一个是山腰，你在那里狩猎；一个是山脚，猎狗在那里狩猎。踩踏着柔软干燥的石松科植物铺成的地毯，从沼泽地中惊起一只只鹌鹑，那真是一种非常奇妙的感受。而对于猎狗的考验之一就是，看看它是否愿意在潮湿的沼泽地面工作，而你却在与它平行的干燥河岸上工作。

但是，在桤木林带变宽的地方，你反而会遇上特殊的麻烦，那便是猎狗经常会处在你的视线以外。此刻，你就不得不立刻爬上一个小山丘，在那儿一动不动地站着，睁大眼睛，竖起耳朵，来追踪猎狗的行踪。然后，一群灰莺仓皇地逃窜可能会暴露出猎狗的所在。之后，你可能会听到它折断了一棵嫩枝，或是在经过水洼时弄得水花四溅，再或者是“扑通”一声跃入某个小溪。但是，当所有的声音都停止的时候，你就要做好射击准备了，因为它很有可能已发现了猎物。这时候，你会听到受到惊吓的鹌鹑在展开逃亡之旅前向同伴们发出的预警。之后，你紧跟着这只鹌鹑，可能又会发现一两只，我最多的时候一共发现过 6 只。它们一个接一个地跃起，竭尽所能地飞向高处的目的地。其中能否会有一只落在你的射程范围之内，就只能靠运气了。如果你有时间的话你可以估算一下打中的概率：用 360 ° 除以 30，或者用你的枪所能涵盖的任何一个角度，去除以代表射偏机会的 3 或 4，这就是你也许能射中的实际的鸟数。

对于猎狗的第二个考验是，在上面这个小插曲过后，它是否会向你报告，听取你的指示。当狗还气喘吁吁的时候，你可乘机坐下来与它商量一番。然后，你们再继续向下一个红灯笼挺进、狩猎。

10 月的微风，夹杂着万事万物的气息。除了鹌鹑还有许多其他的猎物。每一种气息都会引导我的猎狗经历一番奇遇。当猎狗用耳朵摆出一副滑稽的神情时，我知道它发现了一只正在睡觉的兔子。有一次，周围一片死寂，没有任何鸟要飞出的迹象，但是猎狗仍旧纹丝不动。原来，在一丛纸莎草底下，它的鼻子嗅到了一头肥肥的、正在 10 月阳光的沐浴下熟睡的浣熊。另外，每次狩猎时，猎狗都会至少有一次把北美臭鼬困住，对着它汪汪地叫。而且地点通常都是在异常茂密的黑莓灌木丛中。有一次，猎狗向我指了指溪流中间的方向。原来，它惊扰了一只林鸭的晚餐。林鸭向河流上游飞去，发出几声抱怨但很悦耳的叫声。偶尔的，猎狗会在常有牛群来吃草的桤木林中发现滨鹬。有时候，它也会发现白天在两旁是桤木林泽的上游溪岸上小憩的鹿。那么，鹿是否对于会唱歌的小溪有着一种浪漫的偏爱？或者对于一个敌人无法悄悄逼近的睡卧处有特别而实用的喜好？从它那白色的大尾巴愤怒地摆动来看，两种情形都是有可能的。

因此，在两个“红灯笼”之间，几乎所有的事情都可能发生。

在鹌鹑狩猎季节即将结束的最后一天的黄昏，每一株黑莓也跟着“熄了灯”。我不明白为什么一株小小的灌木竟能如此精确地预告威斯康辛州关于自然的法令。我也从来没有在狩猎季节结束后的第二天重返原地探个究竟。因为在接下来的 11 月，“红灯笼”只能在我的记忆中闪耀。有时候，我认为其他的月份只是 10 月和来年 10 月之间的插曲。而且我相信，我的猎狗还有鹌鹑也都会这么认为。

十一月

如果我是风

11月玉米地里的风总是来去匆匆。玉米秆哼唱着，松散的玉米穗与天空半开玩笑地嬉戏着，呈旋涡状急驰而去。而风依旧匆匆。

在沼泽地上，长长的风浪席卷着地面上的野草，吹打着远处的柳树。一棵树试图争辩，光秃秃的树枝摇晃着，但是也没能留住那风。

沙洲上除了风还是风，河流向大海的方向缓慢流淌着，每一簇草都在沙洲上打着圈圈。我在沙洲上漫步，走到一根漂浮而来的原木旁坐下来，倾听着风的号叫，还有碎浪拍打岸边的叮当响声。但是，尽管这条河会唱歌，它却是一条没有生命的河流。周围没有一只鸭子、苍鹭、北方猎兔鹰或是海鸥。因为它们都去寻找避风港了。

在阵阵风声中，我隐约能够听到狗吠的声音，就像远方有只狗在吠叫。说来很奇怪，全世界都像在侧耳倾听，想弄明白那到底是什么声音。很快，这种声音越来越清晰，原来是雁发出的声音。尽管未见其形，但声音却在逼近。

接着，雁群从最低层的云彩中飞了出来，但整个就像一片被扯得乱七八糟的旗帜。忽高忽低，忽左忽右；一会儿卷在一起，一会儿又疏散开来。但整个趋势是往前行进的。只不过风儿一直在与每一片扇动的翅膀角力。当雁群在远方的天际消失成一个点时，我还能听到最后一声雁鸣。那是夏天的熄灯号。

现在躲在浮木的背后还是比较暖和的。因为风似乎是跟着雁群一块儿离去了。如果我是风，我也会随雁群离去。

手拿斧头

上帝可以赐予生命，上帝也会夺走生命。但现在，不再只有上帝才能这么做。当我们比较久远的祖先发明铲子的时候，他便成为生命的赐予者：他可以种植一棵树。但当我们的祖先发明斧头的时候，他又成为生命的剥夺者：他可以砍倒这棵树。由此推知，任何一个拥有土地的人，都在承担着创造植物与毁灭植物的双重职能，不管他有没有意识到。

从那以后，我们的祖先又发明了一些其他的工具。但是如果追本溯源的话，这些工具要么是那两种最原始工具——铲子和斧头的深加工和延伸，要么是它们的附件。我们按职业将人类分为三六九等，但各行各业的区别无非是使用某种特定的工具，还是销售这些工具、修理这些工具、深加工这些工具，抑或是为上述这些工作提供咨询

和建议。通过上面这些分类，我们能够为工具的使用各尽其责。但是，有一种职业——哲学，是例外的。因为哲学通过人类所想及所思，能够知道所有的人如何使用所有的工具。它也能通过人类思考及期望的习惯，知道是否值得去使用某种工具。

11月是砍伐的季节，有很多原因能说明这一点。首先，那时的天气还不至于天寒地冻。我们磨斧头的时候，水不会结冰。同时，那时的天气也不至于让人一活动就大汗淋漓，你可以很舒爽地砍倒一棵树。那时的阔叶树，叶子基本都凋零了。你可以很清楚地观察到树枝是如何纵横交错的。你也可以从中看出这棵树在这个夏天都长了些什么。如果对这些情况缺乏了解，你就无法判断，为了保护土壤，哪些树在万不得已时必须砍掉。

我读到过许多关于环保主义者的定义，自己对此也有不少论述。但我觉得最好的定义不是用笔写就的，而是用斧头来描绘的。因为所谓环保，关乎一个人在砍伐的时候都在想些什么，或者如何决定砍哪些树。一个环保主义者应该很谦恭地知道，他做的每件事都仿佛是在土地这张纸上签字。不同的人签的字当然是不同的；是用斧头签还是用笔签也各有不同。事实也的确如此。

另外，我还发现，在事后分析我决定要砍哪些树的原因时，内心是忐忑不安的。首先我发现，并非所有的树生来平等和自由。比如说，在五针松和红桦拥挤生长在一起的地方，我似乎有一种与生俱来的偏见，我会毫不犹豫地砍掉红桦，留下五针松。这是为什么呢？

原因之一，五针松是我亲自用铲子栽种的，而红桦是从篱笆外擅自闯进来自己生长的。因此从某种程度上讲，我对五针松的偏爱有些“母爱”的味道。但这并非是原因的全部。因为如果五针松像红桦一样，也是一种自生自灭的物种，我也会对五针松偏爱有加。因此，我必须寻根究底，找出我这种偏见背后深层的原因和逻辑。

在我们镇上，红桦是一种很常见的树种，并且有越来越多之势。而五针松就比较珍稀，而且还越来越少。因此，我的那种偏见，多少还蕴涵着关怀“弱势群体”的味道。但是，如果我的农场位于更靠北的地方，那里有很多五针松，红桦比较稀少，那么我会怎样做呢？坦白地说，我不知道。因为我的农场不在北方，而是在这里。

五针松能存活一个世纪，而红桦最多只能存活50年。也许我偏爱五针松是想让我留给自然的印记能更加持久。我的邻居种植了很多红桦，但没有种五针松，因此，也许我想鹤立鸡群，与众不同才选择保护五针松。五针松四季常青，而红桦10月份就几近凋零。我也许是敬佩五针松与风雪搏击的勇气才对其惺惺相惜。五针松仅为松鸡提供庇护所，而红桦则能喂养松鸡。也许我骨子里认为予人点金石，不如予人点金术？住所比伙食更重要？还有，1000立方英尺的松树最后能卖出10美元，而同等体积的红桦只能卖出两美元。也许我选择松树也是选择唯利是图？上面所有这些原因，在某种程度上都能解释我对于五针松的偏爱。但是，它们都不是最重要的原因。

我再试图刨根究底，或许这次找到的是真正的原因。五针松底下，可以慢慢长出

野草莓树、水晶兰、鹿蹄草、北极花等等。而红桦底下充其量只会生长出一株龙胆属的植物。红冠黑啄木鸟可以在五针松上凿出一个鸟巢，而红桦树上能有一只带毛的鸟就不错了。4月份的时候，五针松在微风的吹拂下，已能发出美妙的声音。而那时的红桦，枝头还是光秃秃的。这些原因在解释我对五针松的偏爱上举足轻重。为什么呢？是因为五针松比红桦更能激发我的想像力和对未来的期望吗？如果是的话，造成这种差别的，到底是树还是我？

我所能得出的唯一结论便是，我爱所有的树，尤其偏爱松树。

正如我所言，11月是砍伐的季节。就像在所有的恋爱故事中一样，表现偏心需要技巧。如果红桦生长在五针松的南面，并且更高一些的话，它将会在春天遮蔽五针松顶端的嫩芽，从而阻碍五针松上寄生的象鼻虫在那里产卵。与象鼻虫的危害相比，红桦与五针松的竞争就算不上什么了。因为象鼻虫的后代会杀死五针松的嫩芽，从而使整个松树为之变形。想想挺有意思，象鼻虫对于阳光的渴望和追求，不但决定了它这一物种的生死存续，还决定了我的松树未来的形体，同时也决定了我在使用铲子和斧头方面成功与否。

如果在除去红桦对五针松的遮蔽之后，迎来的是一个干旱的夏天，燥热的土壤就会抵消因少了红桦而减轻的水分竞争的好处。不管我如何偏爱五针松，它的长势都不会太好。

最后，如果红桦的树枝在大风中损坏了五针松顶端的嫩芽，五针松的生长肯定会受到影响。因此，要么忍痛割爱，将红桦铲除；要么在每年冬天将红桦的树枝修剪到不致来年夏天影响五针松生长的程度。

以上这些就是挥舞斧头的人在开工之前必须预见到的。在选择某种偏好之前，你必须权衡再三，沉静分析自己的行为可能带来的正反两方面的后果，以保证好心不办坏事。

通常来讲，农场上有多少树种，斧头的挥舞者就有多少种偏爱。多年来，农夫们根据他们自己对于树种观赏性和用途的认识，根据树种对于他们建设性或破坏性举动的反应，对于同一个树种归纳出不同的特性。我实在很纳闷，不同的人怎么能对同一个树种有如此不同的认识。

因此，对我来讲白杨树是一种好树。因为它能为 10 月的大自然增辉添彩，同时它还能在冬天为我的松鸡提供食物。但是，对我的一些邻居来说，白杨树只是一种杂木。这也许是因为白杨树的生命力过于旺盛，这些人的祖父辈愈想清理某处，白杨树愈能在那里蓬勃生长。（我对这一点是能够理解的，因为我也不喜欢那些能对我的松树构成威胁的榆树。）

再比如，我对美洲落叶松的喜好程度仅次于五针松。这也许是因为美洲落叶松在我们镇上几乎要绝迹了（出于对弱势群体的关怀），也许是因为它能在 10 月份为松鸡洒下金色的阳光（出于狩猎的考虑），或者是因为它能酸化土壤，从而使我们最喜爱的兰花和凤仙花能茁壮成长。然而，由于美洲落叶松生长非常缓慢，从而被林务官们剔除出种植树种的考虑范围。为了能够服众，他们还指称美洲落叶松会周期性地感染叶蜂病。但是对我的美洲落叶松来说，这可能是 50 年以后的事，暂且留待我的子孙去操心好了。而在这期间，我的美洲落叶松会生机勃勃地生长，我的心情也随之高昂。

对我来说，一棵古老的棉白杨是所有树种中最伟大的树。因为早年，它为水牛洒下一片阴凉，上空还有无数的鸽子在盘旋。我热爱小的棉白杨还是因为将来总有一天它会变得很古老。但是，农夫的妻子不喜欢棉白杨（连带也影响了农夫），因为 6 月的时候，雌的棉白杨会产生数不胜数的棉絮，从而阻塞了纱窗。现代人的信念之一是，不计代价地追求生活的舒适。

我还发现，我对树种的偏好要远远高于我的那些邻居们。这是因为我个人对很多物种都有着自己的喜好。而且它们还能笼统地归在一个并不十分光彩的“ 门下 ”——灌木。比如说，我喜欢火树，部分是因为鹿、兔子和老鼠非常喜欢吃它那四四方方的嫩枝和绿色的树皮；部分是因为它那鲜红色的浆果在 11 月冰雪的映衬下显得格外温暖。我喜欢欧洲红瑞木，是因为它能给 10 月的知更鸟提供食物；我喜欢花椒，是因为我的啄木鸟能天天在它们的荆棘庇护下享受“ 日光浴 ”。我喜欢榛木，是因为 10 月份榛木的一片紫色能使我大饱眼福、11 月的柔荑花能喂养我的鹿和松鸡。我喜欢美洲南蛇藤，是因为我的父亲也喜欢它，同时每年 7 月 1 号我的鹿会突然开始吃它的新叶子。我能像魔法师那样向我的客人们预言这件事情。因此，对我这样一个小小的教授来说，面对那些能让我成为成功预言家的植物，我无法不喜欢它们。

很明显，我们对植物的偏好部分是传统使然。如果你的祖父喜欢山核桃，那么你也会喜欢山核桃树，因为你的父亲告诉你要那样做。同样，如果你的祖父用火烧长有毒漆藤的原木，你也不会喜欢毒漆藤，哪怕每年秋天它的深红色让你感到无限温暖。

同样很明显的是，我们对植物的偏好不但能反应出我们的职业，也能反应出我们的兴趣爱好。就像在勤奋与懒惰之间，分配的优先权会很微妙一样。一个宁愿去捕松鸡也不愿去挤牛奶的农夫，不会讨厌山楂树，哪怕它会侵入他的牧场。专门猎捕浣熊的人不会讨厌椴树。我还知道一些捕捉鹌鹑的猎人，尽管每年都会得枯草热，但他们却不会憎恨豚草。因此，我们对植物的偏好实在是我们的情感、品味、对某物的忠诚

或慷慨以及我们如何打发周末休闲时光的微妙反应。

但不管怎样，我情愿用手中的斧头来打发 11 月的周末时光。

坚固的要塞

每一个农场的林地，除了生产木材、燃料和木柱外，也应该为它的所有者提供广泛的教育。这个由智慧耕耘出的作物决不会歉收，但往往是人们忘了去收割。下面就是一些我从自己的林地里得到的经验和教训。

10年前我刚刚买下那片林地不久，我便得知我买下的树疾几乎和我买下的树一样多。那片林地因为树木所遗传的各种各样的痼疾而千疮百孔。我多么希望当初诺亚没有把那些树疾带上他的方舟。然而，很快我又发现，正是这些树疾，使我的林地变成了一个坚不可摧的要塞，整个城镇没有谁的林地可以与我的相匹敌。正所谓“ 成也萧何，败也萧何 ”。

我的林地是一个浣熊之家的活动总部。邻居家没有几个有我这样的福气。11月的一个星期天，一场大雪过后，我明白了我的林地为什么会受到浣熊的青睐。雪地上留下的猎人和猎狗的新脚印，将我引到一棵半立半倒的枫树下。那里藏着我的一只浣熊。冰冻纠缠的根和泥土既坚硬又强韧，砍不断也挖不动。而根下面的洞又太多，猎人想用烟把浣熊熏出来的方法也无法奏效。原来，由于某种真菌的侵蚀，枫树的根遭到严重破坏。再加上暴风雪的摧残，枫树被吹倒在一边，无意中构成了一个坚不可摧的要塞。终于，猎人决定放弃，空手而返。如果没有这个 “ 防弹庇护所 ”，我的那些浣熊必然会在每年络绎不绝的猎人枪下断子绝孙。

另外，我的那片林地还生活着一群有环状羽毛的松鸡。但是在积雪太深的时期，它们会到我邻居家的林地里，那里有更好的庇护所。然而，夏天的暴风雨过后，我的一些橡树会被风吹倒，这些吹倒的橡树却成了我的那些松鸡们在冬日里最好的避难所。因为这些橡树虽然倒了，但还保留着干枯的叶子。因此下雪期间，每一棵树里都能窝藏一只松鸡。从松鸡的排泄物来看，暴风雪期间，每一只松鸡都是在有枯叶做掩护的狭窄的避难所周围栖息、进食和闲荡。在那里，它们不必担心风雪、猫头鹰、狐狸和猎人的袭击。干枯的橡树叶不但给它们提供了绝好的庇护，而且因为某些奇怪的理由，还变成了松鸡爱吃的食物。

当然，能被风吹倒的橡树都是感染了某种树疾的。如果没有感染疾病，鲜少有橡树会被风吹倒。不会被风吹倒，松鸡也就不会有那么好的庇护所了。

感染了疾病的橡树还提供了另外一种显然非常美味可口的松鸡食品——橡树树瘿。所谓树瘿，是在新树枝柔嫩多汁时，被瘿蜂蛰了之后造成的病态发育的结果。每年 10 月，我的松鸡都会大啖橡树的树瘿。

每一年，野蜜蜂都会在我的一棵中空的橡树里面构筑蜂巢。而每一年，那些不期

而至的采蜂人都会先我一步采走蜂蜜。这一方面是因为他们在寻找内藏蜂巢的橡树方面，技巧比我娴熟；另一方面是因为他们“装备精良”，使用了防护网，因此敢在秋天野蜜蜂刚蛰伏的时候就行动。但是，如果树心没有腐败，就不会有中空的橡树供野蜜蜂们构筑橡树蜂巢了。

在兔子周期性的大量繁殖期，我的林地里真是兔满为患。它们像是刻意与我作对似的，专门吃那些我想努力保护的树木或灌木的树皮和嫩枝。而对那些我欲去之而后快的树木或灌木，它们却不闻不问。（当猎兔者为自己建造了一个松林或果园时，兔子便不再是野味，而是变成了一种害虫。）

尽管兔子属于杂食动物，但从某些方面来讲，它们堪称美食家。比如说，对松树、枫树、苹果树或火树，在人工培植的与野生的之间，它们肯定会选择前者为食。另外，它们对某些“色拉”也很挑剔。在屈尊吃这些“色拉”之前，“色拉”必须经过特殊处理。因此，除非欧洲红瑞木曾被蚧壳虫攻击过，从而树皮变得美味可口，兔子们才会对其狼吞虎咽，否则，兔子们肯定会不屑一顾。

一群山雀曾在我的树林中度过了一整年。冬天的时候，我们会砍伐病树或死树，用它们做柴火。这时候斧头发出的声响便成了山雀家族通知进行盛大晚宴的信号。它们在附近穿梭逗留，只等着树能倒下来。不时地，它们还会发出轻蔑的叫声，似乎在嘲弄我们工作效率的低下。而当树最终倒下来的时候，树干也被劈开了，里面所隐藏的东西暴露在外面，山雀便开始大快朵颐。对它们来说，每一块死树皮都是蕴藏着丰富虫卵、幼虫和虫茧的宝藏；而每一块被蚂蚁穿透了的树心都像流淌着牛奶和蜂蜜。我们会经常靠在旁边的一棵树上，欣慰地看着这些贪婪的山雀如何在新劈倒的树干上寻找虫卵。看着它们能从新劈倒的橡树中获得食物和满足，我们劈树的辛劳也就无影无踪了。

但是如果没有树疾和害虫，这些被砍倒的树就不会有那么丰盛的食物提供给山雀。果真如此，冬天，我们的树林中也就不会有山雀为我们带来快乐了。

此外，还有很多种野生生物要靠病树为生。我的啄木鸟会啄活的松树，从腐败的树心中啄出肥肥的蛴螬。我那只不同颜色相间的猫头鹰能在一棵古老的椴树中空的树心中找到避难所，躲开乌鸦和松鸦的骚扰。但是如果没有这些染了疾病的树，我们在某天的日落时分可能就听不到它们的小夜曲了。我的林鸭在中空的树干里筑巢交配，每年6月我那林地间的泥沼中，就会多一窝毛绒绒的小鸭子。所有的松鼠都是依靠寻求腐烂的树洞和树用以愈合伤口的疤痕组织之间的微妙平衡，来保住它们永久的洞穴。当疤痕组织过度侵占它们“门口”的空地时，它们便会噬咬这些组织。也因此，松鼠在这场竞争中充当了裁判兼运动员的角色。

其实，在我这片树疾遍布的林地中，最珍贵的还要数书记官林莺。它们栖息在啄木鸟废弃的洞里，或是那些悬浮于水上的死树根的小洞中。它们那黄蓝相间的羽毛在6月树林中潮湿腐败的一角格外亮眼。它们用自己鲜活的例子证明了死树也能重新焕发生机。如果你不相信，就自己亲眼去看看书记官林莺。

十二月

动物的活动范围

生活在我农场上的野生生物从来不愿明确地告诉我，它们日夜逡巡生活的地方到底占据我农场多大的面积。我对这个问题非常好奇，因为它能告诉我这些动物心目中的“宇宙”与我农场之间的比率，进而能使我知道：谁更能透彻地了解自己所生活的世界。

就像人类一样，我农场上的动物常常会在行动中泄露它们不想明说的心迹。但是，我们很难预测它们什么时候、通过什么样的方式来表明这些心迹。

当我们砍伐木材时，不必挥动斧头的狗可以自由地四处追捕猎物。突然传来的一阵阵犬吠声会告诉我们：一只野兔正从草丛中的睡卧处惊醒，仓皇地向某处逃窜。原来，它是直奔 1/4 英里开外的一处柴堆而去。它认为躲在两堆用绳子捆好的木料垛中间是再安全不过的了。果不其然，那只狗在坚硬的橡树树枝上象征性地咬了几口便放弃了，继续去寻找不是很精明的棉尾兔，而我们也就继续砍我们的柴。

这个小场景告诉我，那只野兔非常熟悉从它草丛中的睡卧处到木料堆下面的藏身处之间的所有地形地貌。否则你如何解释它所选择的逃生捷径？因此，这只野兔的活动范围至少有 1/4 英里。

每年冬天，我们都会铺设陷阱，捕捉那些经常光顾我们牲畜饲喂站的山雀，并为它们戴上脚环。我们的一些邻居也会喂养山雀，但是没有给它们戴脚环。通过留心观察戴有脚环的山雀在离开喂鸟器后的最远活动范围，我们了解到我们的山雀在冬天的活动范围大概有半英里。但是却没有涵盖方圆半英里的全部，只是那些大风刮不到的地方。

夏天的时候，山雀会四处筑巢。我们发现戴有脚环的山雀，其活动范围比冬天大大扩张了，它们还经常与没有戴脚环的山雀交配。在这个季节，山雀对风也不那么畏惧了。经常会在夏风吹拂的地方看到它们活动的身影。

昨夜一场大雪过后，我在穿越我们林场的雪地上看到了 3 只鹿的清晰脚印。顺着脚印向后探寻，我找到了它们的藏身之处，那里没有雪，是在沙洲上的一簇灌木丛中。

之后，我继续顺着脚印向前探寻，结果来到了邻居家的玉米地。鹿已经从雪地中翻寻出了邻家丢弃的玉米粒，还把一个玉米秆垛糟蹋得乱七八糟。再接下来，脚印开始折返，通过另一条路径重新回到沙洲上的那簇灌木丛。途中，鹿踩过几处草丛，用口鼻蹭出其中的嫩芽，然后再到附近的溪流饮水。至此，我看到了鹿一天的完整行程。从其睡卧处到吃早餐处的距离恰好是 1 英里。

我们的林场中常有松鸡出没。但在去年冬天的某日，一场大雪过后，我却一只松鸡都没有发现，雪地上连它们的脚印都没有。我正要断定这些松鸡是耐不住严寒迁走的时候，我的猎狗却在一棵去年夏天被吹倒的橡树顶端覆盖着很多叶片的地方停了下来。它狂吠着，结果 3 只松鸡一个接一个地从里面飞了出来。

令我纳闷不已的是，这棵橡树的树梢底下和附近都没有松鸡的脚印，毫无疑问这些松鸡是飞进去的，但究竟是从哪里飞进去的呢？况且松鸡必须要吃东西，尤其是在寒冷的冬天，它们是怎样维持生存的呢？带着这些问题，我仔细观察了松鸡的粪便，期望从中找到蛛丝马迹。果然，我在一大堆无法辨认的残骸中发现了芽鳞和已经冻住的茄属浆果的黄皮。

我忽然想起，夏天的时候我曾发现了一个枫树灌木丛，那里生长着大量茄属植物。于是我凭记忆找到了那个灌木丛，经过仔细观察，我在一个原木上发现了松鸡留下的脚印。原来，那些松鸡没有走雪地，而是通过那个原木到达了它们的藏身处。期间，它们还搜集了自己所能拿到的浆果。从这里到那棵橡树的东侧，共是 1/4 英里的距离。

那天夕阳西下的时候，我在离那棵橡树西侧1/4英里的杨树灌木丛中看到了一只松鸡，它正在啄食树的嫩芽。但是没有看到它的足迹。至此，我总算明白了。在漫长的冬天，松鸡们不是徒步在雪地行走，而是靠着翅膀飞。而它们的活动范围共有半英里。

但是，科学对于动物活动范围的认识还存在很多盲区。比如说，不同的季节，动物的活动范围会有什么不同？它必须为动物们提供什么样的食物和庇护所？它如何帮助动物抵抗“ 外敌 ”入侵？它是属于某个动物、某个动物家庭还是属于某个物种？这些都是动物生态学的基本问题。每一个农场都是一部关于动物生态学的活的教科书。而农场上的居民就是这部教科书的诠释者。

雪地上的松树

人们一般认为，创造力是上帝和诗人们的专利。但是，平凡的人们如果知道方法，就可以成为这种限制的例外。例如，种植一棵松树，不需要你是上帝，也不需要你是诗人，只需要你有一把铲子。藉着这种奇怪的规则上的漏洞，任何一个乡巴佬都可以说：让那里有一棵树吧 —— 结果那里就真会出现一棵树。

而且如果这个人的身体够强健，他的铲子够锋利，那么他可能会种上上万棵树。7 年后，他就可以倚靠在铲子上，欣赏他亲手栽种的树，会觉得它们美好得仿佛是出自上帝或诗人之手。

而传说中上帝创造全世界只用了不到七天，就把手艺全部传给了人类。但从那以后，上帝对于这些手艺的优点就缄默不语了。我想如果不是因为上帝过早泄露了天机，就是因为无花果的叶子和天空不像大树那样引人注意。

那么，为什么铲子一般被视为苦力的象征呢？也许是因为大多数的铲子都很锈钝。当然，所有的苦力使用的都是锈钝的铲子，但我不确定这两者孰为因孰为果。我只知道精神抖擞地挥舞一把好锉刀，就能让我的铲子所向披靡，干起活来就像唱歌那样欢快。有人告诉我说锐利的刨子、锋利的凿子和解剖刀都能发出类似音乐的美妙声音。但是我认为我的铲子发出的声音是最美妙的音乐。当我想种植一棵松树时，它就会随着我的手腕发出动听的歌唱。因此，我怀疑那些想在历史乐谱上留下最强音而未果的人是不是选择了一个难以驾驭的乐器。

一年之际在于春，只有春天才是播种的季节。这一点是很好的，因为万事万物都要有个度，铲子也是一样。在其他的月份，你就可以静静等待、观察松树成长的过程。

确切地说，松树的“新年”是从5月份开始的。有人形容那时松树顶端的芽苞变成了“蜡烛”。我想如此形容松树成长的人必定是个心思细腻的人。也许有人会说用蜡烛形容新长成的嫩芽是一种陈词滥调，因为新长成的嫩芽看起来就是像蜡烛那样洁白而光滑，笔直而脆弱，这是再明显不过的事实了。然而，那些经常与松树生活在一起的人会说，用蜡烛作比还有更深层的涵义。蜡烛顶端的火焰是一个导向未来的永恒之光。松树顶端的嫩芽也是如此。年复一年，我的松树跟随着顶端的新芽，争先恐后地想达到最顶峰，与天空做最亲密的接触。只要一息尚存，就会努力不已。也许一棵历经久远的松树最后会忘记在它生命中曾引领风骚的众多“蜡烛”中，哪个才是最重要的，因此它会削平自己的树冠。也许你也会忘记，但你有生之年决不会忘记自己亲手培植的松树中，哪个“蜡烛”是最重要的。

如果你是一个节俭的人，你还会发现松树与你志趣相投。因为它们与那些寅吃卯粮、入不敷出的硬木不同，它们从来不会消费现在的“收入”，而是纯粹依靠以前的积蓄。实际上，每一棵松树都像是一本活期存折，每年的6月30号记载着它的存款余额。如果某年的6月30号，它长出的“蜡烛”发出了10个或12个嫩芽，那将意味着它已为明年春天储蓄了足够的雨水和阳光，可以让这些新芽窜到2英尺或3英尺高。但如果储蓄的面额仅是4到6个嫩芽，那么它们隔年窜升的高度也会相应下降。但不管怎样，松树总会带着一副可以从容应对，不会捉襟见肘的独特神态。

当然，松树和人类一样，也会遇到困难的年份。这种情况被记录为“长不高”。也就是说，连续的树枝环节之间的间距较短。这些间距，就像树的自传，那些热爱树木的人可以随意解读。为了确切找出艰困的年份，你必须从松树开始缓慢成长的那个年份再减去一年。比如说，如果1937年所有的松树生长都很缓慢，那么就说明1936年的时候有一场全球性的干旱。同样的道理，如果1941年所有的松树生长都很迅速，那么就说明松树们可能是预见到了什么，因此非常卖力地向世人昭告，它们知道路在何方，尽管人类可能不知道。

如果有一棵松树长势缓慢，而它的邻居却长势依旧，你就可以认定这是某种纯粹局部性的或个体的不幸使然。比如说是因为大火留下的后遗症、田鼠噬咬的结果、大

风造成树皮和树叶的损伤，或者是我们称做“土壤”的这座黑暗实验室的发展在局部地区遇到了瓶颈。

松树之间还有很多悄悄话。有一次通过留心观察，我得以了解在我离家去城里的那个星期都发生了什么。原来3月份的时候，鹿群经常啃噬北美五针松，从残留的噬咬痕迹的高度，我可以想像那些鹿有多么的饥肠辘辘。因为，吃饱谷粒的鹿对于五针松不会有太大的兴趣，对于唾手可得的五针松枝叶，它们勉强还会吃一吃，但五针松树干上超过地面4英尺高的地方，它们就懒得光顾了。而对于一头真正饿坏了的鹿，情形就完全不同了。它们会尽可能地支起后腿，前腿足足可以够到离地面8英尺高的距离。所以，用不着亲眼目睹，我就可以知道鹿的饥饿程度；用不着亲临邻居的田地，我就可以知道他们的玉米收割了没有。

5月份的时候，松树上初生的新芽就像芦笋的嫩芽一样柔软脆弱。停栖其上的鸟经常会把它压断。每年春天，我总会发现一些这样惨遭“斩首”的松树，那些已经枯萎的小“蜡烛”静静地躺在草地上。此情此景，人们能很容易猜出都发生了什么。但是数十年来，我却从来没有亲眼目睹过鸟儿踩断“蜡烛”的场景。由此我们似乎能得出一个客观的结论：我们没有理由怀疑自己未曾亲眼目睹的事物的存在。

每年6月，我们会突然在一些五针松上看到一些枯萎的“蜡烛”，很快这些“蜡烛”会变成棕色，继而死去。松树上的象鼻虫会钻到松树最顶端的芽苞丛中产卵。而孵化出的幼虫又会顺着木髓向下钻，从而导致最顶端的嫩枝死亡。像这样一棵缺乏领导的松树注定会遇到挫折。因为剩下的树枝会为了由谁来领导大家向上空迈进而产生分歧。所有的树枝都想充当领导者，结果各行其道，整棵树不像金字塔，反而更像一丛灌木。

然而一种很奇怪的现象是，只有那些能受到充分日照的松树才会受到象鼻虫的侵扰，而那些处在荫蔽处的松树则能逃此一劫。“祸兮福所倚，福兮祸所伏”讲的可能就是这个道理。

10月份，我的松树以它们被磨得斑斑驳驳的树皮告诉我，雄鹿什么时候又开始变得猖獗。一棵高约8英尺的短叶松，孤零零地站着，似乎特别容易让雄鹿感到这个世界需要刺激。而这样一棵树不得不容忍折磨，最后变得伤痕累累。在这些战斗中，唯一的公义在于，松树愈受到虐待，雄鹿本已不太闪亮的鹿角就带有愈多的树脂。

不过有时候，我们很难诠释树木之间的这些悄悄话。某年仲冬，我在松鸡栖息处的残留粪便中发现了一些无法辨认的半消化状的组织结构。它们看起来像大约半英尺长的小型玉米穗轴。我绞尽脑汁地想了想当地松鸡所食的各种食物，并仔细观察了这些食物的样品，但却始终无法发现丝毫线索。后来，我把短叶松顶端的芽苞切开，在它的核心部分，我找到了答案。原来，松鸡吃了芽苞，消化了树脂，在它的砂囊中磨掉了芽苞的鳞，最后剩下了状似玉米穗轴的东西。而这个东西实际上是即将长出的“蜡烛”的前身。我们可以说，这只松鸡对于短叶松的未来做了投机。

威斯康辛州有 3 种土生土长的松树，即五针松、赤松和短叶松。它们对于“ 适婚年龄 ”的看法分歧甚深。早熟的短叶松在过了看护年龄后，有时一两年就开始开花结果。我的一些树龄仅有 13 年的短叶松都已经有“ 孙子辈儿 ”了。但是，我的那些树龄同样达 13 年的赤松今年才首度开花，五针松甚至还没有开花。它们谨守着盎格鲁撒克逊人的信条：自由、白种、21 岁。

如果不是因为这些松树习性迥异，开花、结果遍布一年四季的各个时段，我的红松鼠们就不会有那么丰富的佳肴。每年仲夏，它们会剥开短叶松的球果，吃里面的种子。球果的外壳散落一地，有的地方还堆成了小山，每一棵树下几乎都是如此。想想我们在劳动节那天外出野餐后的残羹冷炙，不觉有些“ 小巫见大巫 ”。然而，并非所有的球果都会遭此厄运。看看每棵树上在小黄花之间迸出的“ 后代 ”就知道了。

不过，很少有人知道松树会开花。即使知道松树会开花的人，大部分也会因缺乏想像力而将其视为再寻常不过的自然生物现象，而非花的嘉年华。而所有对此有觉悟的人，最好于 5 月的第二个星期在松林中度过；那些戴眼镜的人最好随身多带一条手帕。因为松树丰富的花粉蕴涵量会让所有的人切实体会到这个季节的富足和丰饶。

五针松的幼松经常是在“ 父母亲 ”不在身边时才能达到生长的黄金时期。我知道有一处松林，年幼的五针松即便有充足的日光照射，也会在年长的五针松压制下相形见绌，瘦弱矮小；而有的林地就没有这种情形。我很希望能知道原因，到底是出自谁的宽容和耐性，是幼树、老树，还是土壤？

松树和人类一样，对同伴很挑剔，而且无法压抑它们的厌恶与喜好。比如说，五针松与悬钩子、赤松与大戟、短叶松与香蕨木之间，似乎有着一种天然的亲和力。如果我在遍布悬钩子的地里栽种一棵五针松，那么我敢肯定，不出一年，五针松就会结出一簇簇新芽，蓝色的针状花蕾向人们昭示着它有多么健康以及它对自己的同伴有多么满意。相对那些与它同一天栽种、享受同样的照顾和同等质地的土壤但却以野草为伴的同类而言，它生长迅速且生命力旺盛。

10 月份的时候，我喜欢在这片五针松与悬钩子共生的土地上徜徉。开着蓝色小花的五针松笔直地矗立在悬钩子叶片所铺就的红色地毯上。我想知道它们自己是否能意识到它们是幸福的。我只知道我能感受到它们的幸福。

政府为了寻求永续发展的目的，会采取职务与

任期新老重叠交替的方法去实现。松树则通过同样的手段获得了“四季常青”的美名。松树每年都有新针叶长出，而老针叶枯萎衰败的间隔周期又比较长，故而那些偶尔才看一两眼松树的人，会形成松树四季常青的印象。

不同种类的松树会形成自己独特的生活方式和规律特点，就像是各自都拥有一部自己的宪法，规定着自己针叶的“任期”，以适应自己的生活方式。比如说，五针松的针叶存活日期一般为一年半；赤松和短叶松的则为两年半。新针叶是在6月份“走马上任”，老针叶则是在10月份才递交“辞职申请”。“辞职申请”的内容大同小异，用的都是黄褐色的墨水，11月份的时候会转为棕色。之后老针叶才正式离职。离职后老针叶选择在土壤中发挥自己的智慧和余热，“化作春泥更护松”。因此，松树的成长也意味着智慧的累积。在智者面前，任何慕名前来者都会肃然起敬。

在仲冬的季节，我有时会从我的松树身上激发出某种比森林“政治学”、天气预报的前兆等更为重要的东西。当某个风雪迷离的夜晚，大雪几乎掩埋了一切，万物在积雪的重压下痛苦沉默着的时候，这种感觉尤为明显。因为，我的那些松树，正应了一首诗所描述的那样，“大雪压青松，青松挺且直”。黄昏的时候，我甚至能感受到成百棵松树的存在。每每此时，我的心头就会涌起一股莫名的勇气和激动。

65290

给鸟戴上脚环就像是买了一张彩票或保险。大部分人其实掌握着自己的命运，但我们却要从保险公司购买这些彩票或保险，由别人来掌握自己的命运。这样其实是不明智的。因为保险公司很精明，它们知道卖给我们成败参半的彩票或保险是不会吃亏的。但是，如果我们赌一只戴了脚环的山雀某一天可能会重新光顾你设下的陷阱，从而得知这只山雀还活着，这种实验还是比较客观的。

新手在给新捉到的鸟戴上脚环时会很兴奋。他们一直暗中与自己较劲，总想打破自己以前所创下的数字记录。而经验老道者已经不会满足于这种简单的快乐。真正能令他们兴奋的是重新捉到很久以前自己亲手给戴上脚环的鸟。对于这只鸟的年龄、经历和先前的食欲，他了解得或许比鸟自己还清楚。

在我们家，连续5年来都魂牵梦绕着一个非常重要的问题，那就是编号为65290的山雀能否安然度过下一个冬天？

10年来，每年冬天我们都会在农场上设置陷阱捉山雀，并给大部分捉到的山雀带上脚环。初冬的时候，我们捉到的基本是没有戴脚环的山雀。我们猜想它们可能是当年出生的小山雀。一旦给它们戴上脚环，我们日后就可以跟踪观察。之后随着深冬的到来，经常被我们的陷阱所俘虏的山雀大部分都是戴了脚环的。由此我们推知当时当地的山雀都是在我们这里“上了户”的。从统计的数目来看，我们可以知道当地有多少山雀，有哪些是前一年刚上过户后的幸存者。

编号为 65290 的那只山雀是构成“ 1937 世代 ”的 7 只山雀中的 1 只。它刚被我们捉到的时候，笨手笨脚的，没有一点机灵劲儿。就像其他 6 只同世代的山雀一样，有勇无谋。我刚把它从陷阱中拿出来的时候，它像其他 6 只一样，都不约而同地啄我的手指。而当我给它戴上脚环，并还它自由之后，它啪嗒啪嗒地飞上一棵树的枝头，稍微有些不耐烦地啄它脚上的铝环。待发现不可能成功之后，便抖抖身上蓬乱的羽毛，轻声诅咒着，又开始追逐着自己的同伴嬉戏去了。我以为它会从这次的经历中吸取教训，以后不会再被捉到。但后来的事实证明我错了，那年冬天我又捉到它三次。

第二年冬天，我们捕获山雀的记录上显示，“ 1937 世代 ”的数目由 7 只锐减到 3 只。第三年冬天，减到两只。而到了第五年，编号 65290 成了它那个世代的唯一幸存者。5 年来，编号 65290 的智商似乎毫无长进，然而它那非凡的生存能力却已载入“ 史册 ”。

第六年冬天的时候，编号 65290 没有再次出现。之后的 4 年，它也没有再次光顾我设下的陷阱。由此我基本可以断定，编号 65290 终于消亡了。

10 年来，我们一共给 97 只山雀上了脚环。编号 65290 是唯一一只能连续存活 5 个冬天的山雀。另外有 3 只存活了 4 年、7 只存活了 3 年、19 只存活了两年、67 只只存活了 1 年。因此，如果由我来经营山雀的保险业务，我可以胸有成竹地计算保险费。但是问题是，我拿什么来支付“ 鳏寡孤独 ”者的保险费呢？也许只能靠蚂蚁卵了。

我对于鸟类知之不多。因此只能靠猜测来解释为什么编号 65290 能比它的同伴活得时间长。是它比同伴更聪明从而更容易躲避敌人吗？但它的敌人又会是谁呢？山雀太小了，它会有敌人吗？那个被人们称作“ 进化 ”的古怪家伙，把恐龙变得太大，以致于大得笨重到会被自己的脚趾绊倒。它还把山雀变得“ 高不成低不就 ”。要么想把它变小，结果非但没变小，连都觉得它太大；要么想把它变大，结果也是事与愿违，鹰和猫头鹰都嫌它太小。于是，“ 进化 ”看着自己的作品，满意地笑了。众生却开始嘲笑这些体型矮小而生机勃勃但却无人问津的小生命。

但是，也有一些鸟认为山雀还是值得猎食的，比如说美洲雀鹰、叫枭、伯劳，尤其是小小的锉锯枭等。不过，我只有一次发现了山雀遭“ 谋杀 ”的证据。我在一只枭的粪便中发现了我的一个铝环。或许这些小小的强盗对于同样小小的猎物也会“ 惺惺相惜 ”吧。

天气丝毫不具备任何幽默感和涵养，因此看起来好像是杀死山雀的唯一凶手。我猜想，在为山雀开设的“ 主日学校 ”里，有两种行为被认为是不可饶恕的大罪，即冬日冒险飞进大风区和在大风雪来临前翅膀被淋湿。

我之所以知道这一点，是因为我在冬天一个飘着毛毛雨的黄昏，亲眼目睹了一群山雀飞回森林栖息处的过程。那场毛毛雨从南边的天际飘然而至。我根据当时的状况断定，这场雨会向西北部转移，在明日凌晨时分，气温将会急剧下降。山雀们在一棵枯死的橡树里安顿下来就寝。这棵橡树的树皮已经剥落了，弯曲成各种不同大小、尺

寸和形状的卷曲物、杯状物和窟窿。有的山雀选择了南边雨丝打不到的干燥地方，但因为北面缺乏庇护，次日凌晨的时候它们都被冻僵了。而有的山雀则占据了“地利”，无论从哪个方向都不会被雨淋着，因此它们次日可以安然无恙。我想这也许能够解释为什么编号 65290 的山雀可以比它的同伴们在生存能力上略胜一筹。

我们可以从山雀的行为很容易看出它们对多风地区的恐惧。冬天的时候，除非不刮风，山雀才会冒险从林中的巢穴飞出来，但其活动范围是与刮风的剧烈程度成反比的。我知道几处经常有大风肆虐的林地，整个冬天就几乎看不到山雀。但除去寒风凛冽的冬季，其他季节山雀随处可见。而那些林地之所以风刮起来肆无忌惮，是因为牛羊几乎吃光了所有的草和地面植物。对于农夫们来说，牛是越多越好。对于牛来说，牧场是越多越好。然而农夫却将林地抵押给只顾着赚钱的银行家。银行家整日生活在有空调的房间，对他们来说，风并非那么的难以容忍，但福雷艾伦地区的风例外。不过，对于山雀而言，冬天刮风的地区即意味着是活动范围的禁区。假若山雀有一间自己的“办公室”，那么，它办公桌上的座右铭将是：追求平静。

山雀对待陷阱的行为揭示了上面这种现象的原因。如果你设置陷阱，必须得靠一定的风力才能让山雀掉入其中，否则，无论拿什么做诱饵，山雀都不会上当。反之，你的收获会很大。从后面刮来的风，既寒冷又潮湿。幸好在翅膀和羽毛的庇护下，山雀仿佛随身携带着一把雨伞和“空调机”。五子雀、灯芯草雀、树麻雀和啄木鸟等鸟类也害怕从后面刮来的风。但是因为它们的“挡风设备”比较大，因而相对而言，它们对风有着较强的抵抗力。关于自然界的书籍很少提到风，这是因为这些书都是闭门造车造出来的。

我觉得对于山雀而言，还有第三种禁忌，即不能对所有的噪音感兴趣。我们在森林中砍树的时候，山雀会立刻闻声而来。它们会一直呆到被伐倒的树或劈开的原木中出现令它们欣喜若狂的新昆虫卵或蛹为止。猎枪的射击声也会吸引山雀的到来，但结果是山雀非死即伤。

在有斧头、大锤、猎枪的日子里，什么是山雀晚餐的铃声呢？也许是树倒的声音吧。在 1940 年的 12 月，一场暴风雪击倒了我们森林中无数的枯树干和树枝。结果山雀们便对我们陷阱中的诱饵嗤之以鼻了。足足有一个月，山雀们沉浸在暴风雪无意当中给它们带来的丰盛筵席里。

编号 65290 的山雀早已离开了我。但我希望在它曾生活过的森林里，会整天都有充满昆虫卵和蛹的巨大橡树的倒落。那里没有风来滋扰它的平静和破坏它的胃口。我希望它能依然戴着我的脚环。

第二部分 地景特质

威斯康辛州

沼泽挽歌

黎明的微风徐徐吹拂着一望无垠的沼泽地；薄薄的雾霭在不知不觉当中向四处蔓延开来，它就像白色的冰河幽魂，霎时间笼罩了排列如方阵的美洲落叶松和布满露水的沼泽草地。而四下仍旧一片寂静。

似乎是从遥远的天边隐约传来一串小铃铛的丁当声，又似乎害怕搅扰沉睡的土地，丁丁当当的声音若隐若现，似有还无。之后，四周又一片死寂。现在再侧耳倾听，你会听到一只嗓音美妙的猎犬发出吠叫，旋即引来一群猎犬喧喧嚷嚷的回应。再接着，远方的天际响彻着一阵嘹亮的狩猎号角，这阵号角划过天空，在浓雾中扩散。

黎明前的沉寂，就这样不时夹杂着高低起伏的号角声，终于，寂静被彻底打碎了。喇叭声、嘎嘎的响声、哇哇的叫声以及各式各样喧闹的声响，以其黑云压城般的迫近，震撼着这片沼泽地。尽管这些声响似乎就像是在身边响起，但是究竟它们来自何方，却没人能辨得清。这时，一道闪亮的阳光划破了黎明前最后的黑暗，天完全放亮了。清晰的天空，我们可以清楚地看到一群群飞鹤。刚从雾霭的遮蔽中释放出来，它们的翅膀似乎是静止的。但很快，它们的翅膀便在清晨的天空中划过一条条美丽的弧线，降落在它们经常觅食的沼泽地上。在这片点缀着一只只美丽飞鹤的大地上，新的一天开始了。

历史的厚重感在沼泽地上有着超乎寻常的体现。早在冰河时代，同样的场景便开始轮番上演。飞鹤欢快的鸣叫成为早春的征兆。构成沼泽地的厚厚的泥炭层，成为古

老湖泊、盆地原始而又常新的外貌。眼下的一只只飞鹤，与其说是站在沼泽地上觅食，不如说是站在它们同类遗骸堆积成的历史书卷中寻找过去的回忆。厚厚的泥炭层，源自成千上万年大自然的变迁与演进。分布在池塘地表的苔藓、凋零在苔藓表层的美洲落叶松以及冰河时代过后开始繁衍生存的飞鹤的遗骸，在岁月的流失中悄然改变自己的形态，经过无数次的碰撞、压缩，最终化成泥炭层中有机的一分子。此外，无数前仆后继的游历者和探险者们，也用他们的尸骨，不断构筑着远古的沼泽地通向未来的桥梁。后人们可以追寻前人的脚步，在前人打造的基础上继续生存、繁衍、死亡。如此循环往复，沼泽地成为厚重历史的记载者和见证人。

是什么力量促成了大自然的繁衍生息？看那只逡巡在沼泽地上的鹤，忽然连续吞掉了几只倒霉的青蛙。然后，大腹便便、心满意足地飞上了天空，继而又展开它那对强劲的翅膀，朝着初生的太阳翱翔。它欢快地鸣叫着，鸣叫声在美洲落叶松树林中久久回荡。看它那副志得意满的模样，似乎知道了大自然所有的奥妙。

就像欣赏艺术品那样，我们对于大自然特质的感知，也是从对美的渴望与追求开始的。这种感知随着事物的发展演进逐步深化，但这种同步性并非是绝对的。事物的发展总要达到一种层次和境界，这种层次和境界是言语难以形容的。比如说鹤的特质和魅力，就是我们无法用语言描述的。

或许也可以这么说：我们对于鹤的认识和欣赏是随着早期历史的揭秘而慢慢开始的。现在我们知道，鹤的族类最初源自于始新世时代。但是，物竞天择，适者生存，同宗同源的动物群当中，有一些逐步被大自然淘汰了，当然也包括鹤的远古祖先。现在我们所听到的鹤的鸣叫，其实不能单纯地视之为鸟叫，它是对于过去沧海桑田历史的见证，也是对于千万年来生物和人类生存环境变迁的见证。

因此，从生物进化史的角度来看，如今这些活生生的鹤，它们能有今天这样的形态和适应性，并非一夕之功，其实是已经跨越了非常漫长的历史。每年它们有规律性的迁徙，仿佛是标示地质层年龄的时钟。而它们的回归，也赋予了这片大地特殊的荣耀。在绵延不绝的历史画卷上，有鹤群栖息的沼泽地，也因此成为古生物学家族中的贵族。这种贵族身份是在无限悠悠岁月的演进中慢慢获得的，唯有猎枪才能将其终止。在这片沼泽地的某些地方，我们可以感受到一种悲怆苍凉的气息，或许是因为它们曾经也有栖息的鹤群，只是由于某种原因，黄鹤已去，空留沼泽地。而这片沼泽地也将随鹤群的离去，而成为历史长河中的普通一分子，随波逐流。

每个时代的猎人和鸟生物学者，都似乎能感受到鹤的某些特质。一看到像鹤这样的猎物，古罗马帝国的皇帝弗雷德里克便会不由自主松开他的矛隼；一看到像鹤这样的猎物，元世祖忽必烈的猎鹰也会猛扑过去。马可·波罗在他的游记中写道：“带着矛隼和猎鹰出去打猎，本是可汗最大的乐趣。但是，可汗却在自己位于查干湖的那座富丽堂皇的宫殿四周留置了一大片肥沃的草原。那里栖息着大量的鹤。他派人种植黍和其他谷类，好让那些鸟没有挨饿之虞。”

鸟生物学家伯格，童年时代在瑞典的欧石南荒野看到过鹤群，从此便把研究鹤作为自己终身追求的事业。他曾经跟着鹤群到达过非洲，发现了鹤群在白尼罗河的避冬之处。在回忆他第一次见到鹤群场景的时候，伯格说道：“那种场面，足以使《一千零一夜》中的大鹏黯然失色。”

冰河自北而南倾泻而下。湍急的冰流撞击着绵延的山脉，发出嘎吱嘎吱的响声；雕凿着一条条峡谷，发出噼里啪啦的碎裂声。一些爱冒险的冰块还会独辟蹊径，跃到巴拉布山的山脊，然后返冲进威斯康辛河的河口峡谷中。高涨的河水被山脉和峡谷挡住了去路，回转开来，形成了一个相当于半个威斯康辛州面积的巨大湖泊。东面与冰崖毗邻，湖水不断地被冰山上融化的雪水补充和更新。尽管历经岁月的变迁，这个古老湖泊的轮廓仍然清晰可辨，而这个湖泊的底部就成为现在这片沼泽地最原始的基础。

在远古时期，冰山上融化的雪水源源不断地汇入那个湖泊，最终湖水在巴拉布山东部找到了缺口，汩汩溢出形成了威斯康辛河的一条新的分支，而湖泊自己却慢慢干涸了。这时候，鹤群们来到了这片干涸后的湖泊地，在那里庆祝冬天的退却，春天的来临。与此同时，它们也小心翼翼地开始了开发沼泽地、建设新家园的工作。它们叼来水藓泥沼，堵住了湖泊的出水口。它们还搬来莎草、美州落叶松的树叶以及云杉等植物，平铺在几乎已经干涸的湖泊的表层。慢慢的，这些植物的根茎似天罗地网般在整个表层蔓延开来。它们吸干了湖泊里残留的湖水，再经过成千上万年的演变，形成了泥炭层。终于，湖泊渐渐消失了，然而鹤群却没有消失。每年春天，鹤群都会回到这片曾经是古老的湖泊和水道、如今成为覆盖着苔藓的草原上，又唱又跳。同时还精心哺育它们的后代——那些长着栗色羽毛的瘦长的雏鹤。但奇怪的是，这些雏鹤虽然都是鸟，但它们的名字却不是叫“雏鸟”，而是叫“小马”。我讲不清确切的原因，但是如果你在一个6月的清晨，看它们在布满露水的沼泽地上，追逐杂色母马时欢欣雀跃的样子，也许你会猜出答案。

一望无垠的沼泽地上，星罗棋布地分布着一些覆盖着苔藓的小溪。曾经有一位身着鹿皮、专门铺设陷阱狩猎的法国猎人，乘着独木舟来到了这片沼泽地。对于他的入侵，鹤群们给予了讥讽和嘲弄般的尖叫，以此牢牢捍卫自己的领地。一两百年之后，步着那位法国人的后尘，一些英国人坐着有顶棚的四轮马车也来到了这片土地。他们在毗邻沼泽的冰碛地中开垦出一大片土地用于种植谷物和荞麦。但是，他们这样做的目的不是像忽必烈在查干湖那样喂养鹤群，而是为了维持自己的生存。然而，鹤群们才不管是什么人出于什么目的开辟了这片美食城，它们只要能享用美餐就可以了。对于鹤群们肆无忌惮的掠食，开垦者们愤怒了，他们用各种各样的办法驱赶鹤群。在没有办法取得开垦者的谅解，允许它们食用谷物的情况下，鹤群们只好飞过沼泽，再去寻找下一个农田。

那时候还没有紫花苜蓿，山丘上的农田非常贫瘠，遇到干旱的年份整块农田就像覆盖着一大片干草。有一年，天气非常干燥，有个人在美洲落叶松树林中点了一把火，

火势很快蔓延到附近的加拿大拂子茅草地上。当大火过后，清除掉死去的树木和干草，加拿大拂子茅草地就成了一片肥沃的干草场。之后的每年8月，就会有人来收割干草。冬天，当鹤群南下以后，人们又都会驾着马车来到已经冰封的草场，掘出干草，把它们运到山上的农田。每年，人们就如此循环往复地放火烧茅草地，然后再收割干草。仅仅用了 20 年，整个沼泽地就点缀着很多干草场了。

每年的 8 月间，拓荒者们来到沼泽地搭起帐篷，载歌载舞，同时对于鹤群极尽驱散之能事。他们用鞭子拍打，用尖叫恐吓。终于，鹤群们带着自己的幼子，退避到远处。在那个季节，鹤群那如战舰般灰色的羽毛会褪变成红褐色，所以，拓荒者们称呼鹤群为“红鹭”。当拓荒者们收集了足够的干草，返抵山上的农田后，沼泽地便又成了鹤群的天下。它们呼朋引伴地回到沼泽地，在刚刚收割留下的残株间盘桓，不时地还会去偷袭玉米地。但是，这种快活的日子持续不了多久，寒霜降临的时候，便是它们应该南下迁徙的时候。

对于沼泽地的拓荒者而言，干草场上的日子简直就是世外桃源。人类和动物、植物以及泥沼和谐地共同生活在这片土地上。他们彼此包容，互惠互利。其实，沼泽地本身就可以永远不断地生产干草、草原榛鸡、鹿、巨稻鼠、会唱歌的鹤、红莓苔子等等。

但是，沼泽地上新的土地主们却没有这种原始朴素的观念。他们不会把土壤、植物或者是鸟类纳入他们的共荣圈中。因为那种生态环境虽然平衡和谐，但却分不到多少实际的利益。他们不但在沼泽四周开辟农场，而且还觊觎沼泽地本身，试图去开发改造沼泽地。于是，大家一窝蜂地挖掘沟渠、开发土地。终于，沼泽地丧失了它本来的面貌，到处都是排水沟，到处都是农田农场。

然而，新拓荒者的努力却没有换来同等的回报。农作物连年歉收，而且还要遭受霜打的破坏。此外，昂贵的排水沟的建造费用又使他们负债累累。无奈之下，新拓荒者们离开了这片土地。慢慢地，河床干涸了。泥炭层开始变得干燥，极易燃烧。整个沼泽地笼罩在更新世般热辣辣的阳光照射中。然而，面对数十年的苦心经营成为一片废墟，却没有人为这样的耗损感到痛心，只有人捂着鼻子抱怨：浓烟太呛人！炎热的夏季过后，那种燎原之势仍丝毫不减，即便是冬天的大雪也无法完全扑灭沼泽地上的熊熊烈火。累月的燃烧，茂密的树林被夷为田野和草地，火苗甚至还蔓延到古老湖泊的沙地上。那里覆盖的上万年的泥炭层也留下了火烧的烙印。“野火烧不尽，春风吹又生”，繁茂的野草从灰烬中探出脑袋，让你不得不佩服生命的奇迹。一两年过后，杨树丛也茂密起来了，然而鹤群们却没有展现出同等顽强的生命力，它们的数量随着残存草场面积的缩减而与日俱减。对于它们来说，动力铲的轰鸣不啻为丧钟的敲响。那些一味推进所谓社会发展和进步的人们，太忽略鹤群的存在。在这些工程师眼中，多一种鸟类与少一种鸟类没有什么大不了的，然而沼泽地有没有排水沟却至关重要。这也正是他们不顾生态环境的破坏而大兴土木的主要原因。

像上面的这种情况，年复一年地发生着。农作物的产量每况愈下，野火越燃越旺，野草地越来越多，鹤的数量却越来越少。看起来只有让沼泽地重新有水，才能阻灭泥炭层的火势。在这期间，一些农夫种植了一些红霉苔子，堵住了排水沟。几处有水的沼泽地才慢慢恢复了从前的生机。“居庙堂之高则忧其民”的政治家们也在为边陲土地的流失、生产相对过剩、失业救济和自然环境保护等问题大声疾呼。在这种情况下，经济学家和发展规划者们开始正视沼泽地的问题。勘探者们、技术人员以及国有资产保护团体的人士，也云集于此，共商对策。一场大规模的防止沼泽地水源流失的运动开始了。先是政府出资收购了这片沼泽地，然后重新安顿农户，将所有的排水沟都堵住，以蓄住水源。慢慢地，沼泽地又变得湿润了。很多曾有火烧烙印的地方都变成了池塘。这时候，尽管野火仍无法完全熄灭，但它们已经没有威力再去入侵潮湿的土壤了。

上面这些举措对于鹤群的繁衍是有利的。但是，那些在烧过的地面上不屈不挠蔓延着的杨树丛，那些伴随着政府环保计划必然出现的道路迷宫，对于鹤群来说却未必是好事。在环保主义者看来，道路的修建是理所当然的事情。不管到底需不需要，先建了再说。因为就像没有排水沟的沼泽地对于早期拓荒者而言一文不值一样，没有道路和交通的沼泽地对于环保主义者来说也是毫无价值的。其实，孤寂也是一种自然资源。遗憾的是，目前除了鸟类学者和鹤群们能体会它的价值以外，那些所谓的环保主义者们并非能懂得孤寂也是需要去保护的。

因此，无论是沼泽地，还是市场交易地，其历史总是以悖论结束。沼泽地的终极价值就在于它们是野地，而鹤是野地的化身。然而，所有对于野地的保护措施都是与终极价值目标背道而驰的。为了显示对野地的珍惜，我们必须去观赏它、爱抚它，而当我们观赏够了、爱抚够了，我们视之为珍贵的野地也就所剩无几了。

或许有一天，也许正是在我们自以为是向自然施惠的过程中，也许是在地球末日，最后一只鹤会向我们道声再见，从沼泽地盘旋着离去。在遥远的天际，会传来狩猎的号角声、猎犬的吠叫声、小溪的丁冬声的绝响。然后就是再也打不破的沉寂。除非是在遥远银河系的某个角落，还存在一片牧场，能供我们重温过去的回忆。

沙郡

每一种行业都有自己的一种带有负面意义的行话，并且需要一个领地，让这些负面意义的行话能畅快淋漓地发挥。因此，经济学家必须找到一个领域，以让他们的那些负面行话，诸如低于边际收益、经济衰退和制度僵化等等有用武之地。在辽阔的沙郡，这些带有负面意义的经济术语得到了有效的发挥和充分的利用。而且，对于各种各样的反驳与批判显得很有免疫力。

同样，对于土壤专家来说，如果没有沙郡，他们的日子会很难过。因为，除了沙

郡之外，哪个地方还能与灰化土、灰黏土和厌氧菌等等扯上联系？

最近几年，社会发展规划者们开始为了不同的目的来开发利用沙郡这片土地。假如把沙郡的地形地貌绘成一张平面地图，用相同的圆点代表 10 个澡池、 5 个妇女义工团体、 1 英里的柏油马路或 1 只纯种公牛的共有权，那么，这张地图注定是非常单调的。因为地图上大部分地区都是沙土地。

简而言之，沙郡是人烟稀少而且贫瘠的。

然而在 20 世纪 30 年代，伴随着社会大变革，各种各样的改革举措也波及到辽阔的沙郡地带。政府规劝沙郡的农户离开沙郡，到别处定居。但是，这些民智未开的农夫不愿意离开这片土地。即便有联邦土地银行百分之三的利息引诱着，他们也不为所动。我想弄明白原因，于是，我为自己买了一座沙地农场。

6 月的某个时候，我会在每一株羽扇豆上发现晶莹的露珠。每每此时，我便开始怀疑这些沙地是否真的那么贫瘠。真正贫瘠的沙地是长不出羽扇豆的，遑论每株羽扇豆上宝石般的露珠？但如果沙地上真的是长出了羽扇豆，杂草管理员会毫不犹豫地将它们割除。因为这些管理员们鲜少发现挂着晶莹剔透的露珠的羽扇豆。而那些经济学家们也同样无缘了解羽扇豆的价值所在。

除此之外，或许那些农夫们不愿搬离沙郡还有更深层次的历史原因。每年 4 月，银莲花在遍布沙砾的田陇郁郁葱葱盛开的时候，我那样的感觉会越发强烈。银莲花不会告诉我它们偏好遍布沙砾的田陇的原因，但我猜想其原因要追溯到将沙砾带到此处的冰河。只有多沙砾的田陇才会贫瘠到寸草难生。为了能独享 4 月阳光的照射而尽情绽放，银莲花只好“风物长宜放眼量”，宁愿忍受风雪、冰雹和寒风的肆虐，也要独处一隅，尽享独自绽放的豪迈与壮美。

除了银莲花，还有一些植物也是希望能够有足够的空间去挥洒，而不希望有肥沃的土壤作为温床。蚤缀就是这样的一种植物。在羽扇豆为最贫瘠的山丘泼洒蓝色之前，它们就已经为其装点上密密麻麻的白蕾丝了。蚤缀就是不愿生长在肥沃的农场上，即便是装设有假山庭园和秋海棠的农场对蚤缀也没有吸引力。再比如柳穿鱼，它们是那么的娇小，那么的纤细，又是那么的蓝，除非它们就在你的脚下，否则你很难发现它们。而除了在风沙肆虐的地方，有谁曾在别处看到过柳穿鱼？

还有一种植物叫做葶苈。它的渺小堪称真正的渺小。在葶苈面前，柳穿鱼简直就是庞然大物，当然这是一种夸张的说法，但足见葶苈的

微乎其微。在我认识的经济学家当中，没有一个人听说过葶苈这种植物。但如果我是一个经济学家，我一定会俯伏在沙地上，一边欣赏咫尺之内的葶苈，一边研究我的经济学。

还有一些鸟类，也是沙郡的特产。至于原因，有的能说清，有的就说不清。比如说，泥色雀鹛生长在沙郡，很显然是因为它们迷恋着短叶松，而短叶松又迷恋着沙地。再比如沙丘鹤，它们生活在沙郡，很显然是因为它们迷恋着孤寂，而除了沙郡，没有其他地方可以使他们享受那份孤寂。但是，丘鹬为什么也把巢筑在沙郡？看来，它们对于栖息地的选择不是建立在对食物这一俗物的追求基础上的。那么，原因到底是什么？经过几年的研究，我大概猜出了原因。公丘鹬在发出叫声开始它的空中舞蹈时，就像穿着高跟鞋的矮小淑女。如果是在长满浓密而相互缠绕植物的草地上，会使它们感到行动非常不方便。但如果是在沙郡最贫瘠的牧场或沙地上，除了紧贴着地面的苔藓、葶苈、碎米芥、酢浆草和鲽须之外，没有其他稍微高大的植被作为障碍，这些短腿的鸟儿可以为所欲为，丝毫不受羁绊，至少在4月份可以如此。总之，只有在沙郡，这些公丘鹬才可以毫无阻碍地“噗”的一声张开翅膀，或者得意洋洋地昂首阔步，或者装模做样地走小碎步，同时它们还可以很轻松地俯视静静躺在地上的“观众”。就是这样一种环境，哪怕一天只有一个小时、一年只有一个月、丘鹬中只有公丘鹬能够享有，也足以超越单纯的食物方面的要求，使丘鹬决心在沙郡定居。

而经济学家还没有尝试为丘鹬另觅栖息处。

奥德赛

自从古生代的海水淹没了这块陆地以来，X便定格在石灰石岩脊里。对于封锁在岩石中的原子X来说，时间似乎并没有流逝。

而当大果橡的根钻入岩石的缝隙，并且开始扎根、吸吮养料时，一切便发生了变化。在漫长的历史长河中，一个世纪恍若白驹过隙，仿佛是在一刹那间，岩石破裂了，X被暴露在外面的生物世界中。它变成了一朵花儿，花儿又变成一粒果实，果实养肥了一头鹿，鹿又喂养了一个印第安人，一切似乎都是在一年的光景中实现的。

在印第安人体内生活的那段日子里，X再次经历了追逐和逃亡、盛宴和饥荒、希望和恐惧的洗礼。在X的感觉中，所有发生的一切就像是每个原子颗粒中永无休止地发生着化学推拉变化一样。当这位印第安人告别这个世界逝去的时候，X会在地下经历短暂的腐朽，然后再开始第二次类似的循环。

这一次X能重新回到外部世界，是因为须芒草的根把它从土地中吸了上来，并把它安顿在一片叶子里，让它在6月大草原绿色的波浪中摇荡，与叶子中其他的元素共同分摊贮存阳光的工作。这片叶子同时还必须承担一份不寻常的工作：在鸫的蛋上倾泻阴凉。美丽的鸫鸟在高空盘旋，赞叹歌颂美好的事物——也许是在歌颂蛋、也许是

在歌颂阴凉、也许是在歌颂草原上那片雾一般的粉红色夹竹桃。

当[illegible]鸟准备飞往阿根廷的时候，所有的须芒草都挥舞着长长的新穗，向它们道别。当首批大雁从北方飞到这里时，所有的须芒草已经变成了酒红色。这时，一只眼疾手快的北美鹿鼠似乎有预见似的，咬下了X栖身的那片叶子，然后把它拖进地下的鼠穴。那样子仿佛是要从掠走夏天的寒霜手中偷走一抹阳光似的。但是，北美鹿鼠没有得偿所愿，它不幸被一只狐狸吃掉了。于是，鼠穴在没有主人光顾以后受到真菌和霉菌的侵蚀，很快便开始破败腐烂了。X又重新回到了土壤，可以自由活动、尽情遐想了。

接下来，X先后进入了一株格兰马草、一头水牛，后来作为水牛的粪便又进入了土壤。再接下来，X又先后光顾了一株弗吉尼亚紫露草、一只兔子和一只猫头鹰，之后又循环到一丛鼠尾粟内。

无论X以哪种方式进行循环，最终都得有个结束。这一次是以一场草原大火而告终。这场大火将草原上的植物烧成了灰烬。磷原子和碳酸钾存留在了灰烬里，氮原子则随风飘逝。这时候，旁观者也许可以预见一场生命过早的夭折。因为当大火将氮原子全部耗尽时，土壤也就会因养料的丧失而失掉附着在其上的植物。

但是，大草原不会因为一场大火而一蹶不振。对于各种突变，草原自有应对之策。大火是把草儿变得稀少，但是却给豆科植物带来了勃勃生机。什么瓣蕊豆、灌木胡枝子、野菜豆、野豌豆、灰毛紫穗槐、苜蓿和赝靛等等，一个比一个茂盛。每一种豆科植物的根瘤内都携带有自己所独有的菌类。根瘤从空气中吸取氮元素，将其输入植物体内，但最终还是要回到土壤里面。因此，大草原有着惊人的储蓄氮元素的能力。它源源不断地通过豆科植物丰富自身氮元素的含量，相对于大火燃烧消耗掉的氮元素来说，足以相抵而且还有盈余。大草原的富庶，连最卑微的北美鹿鼠都了如指掌，但是在漫长的岁月递嬗中，大草原为什么富庶的原因却鲜有人问津。

上面提到了X通过生物链进行的两次征途，在这两次征途之间的空当，X静静地躺在土壤里，随着雨水一点点地被冲到山下。有时，活着的植物会把X吸到体内，延缓这种行程，而死去的植物也会把X吸收到其已经腐烂的组织细胞中加以暂时的固定。而动物们吃下这些植物，山上山下乱窜，至于X会被带到什么地方，则完全取决于动物是否死去或者是它们排粪的地点。没有任何动物会意识到它们死亡地点的意义要远远超过它们死亡这一事实本身。因此，当一只狐狸在草地上吃掉一只黄鼠而恰巧X在黄鼠体内，那么X就可能被带往狐狸位于岩脊边缘的洞穴，但是，一只鹰早已在狐狸的洞穴口守候多时，狐狸又成了鹰的美餐。垂死挣扎的狐狸能意识到自己末日的降临，但却无法知道它的末日却是X在“奥德赛新旅程”的开始。

最后，一个印第安人猎获了鹰的羽毛，并且用它们来安抚命运之神，希望命运之神能对印第安人有特别的眷顾。但是，印第安人可能并不知道，命运之神也许正在忙着处理地球引力的问题，根本无暇他顾。至于老鼠和人类、土壤和歌曲，都只是延迟原子流向大海进程的手段罢了。

有一年，当X置身于河边的一棵棉白杨体内时，一只海狸把它吞进了肚里。通常，海狸觅食的地方都要高于它死亡的地方。那年冬天霜降之后，海狸栖息的池塘干涸了，海狸也就饿死了。后来，X随着海狸的尸体顺着春天融化的雪水向下流，在短短一个小时的时间内，X旅行的距离就远远超出了它在过去一个世纪旅行的距离。在回流的河水形成的沼泽入口处，X成了一只小龙虾的午餐，而小龙虾又被浣熊吃掉，最后浣熊又成了一个印第安人的食物，印第安人去世后，葬身于河岸边的土冢里。一年春天，河堤坍塌，河岸被淹，包括那座土冢。经过一个星期的漂泊之后，X终于回到了它的故乡——大海。

一个逍遥于生物链条上的原子实在是太自由了，以致于不懂得自由的意义。回归大海的原子已经忘记了它曾经经历的自由。每当一个原子葬身大海，大草原就会从腐朽的岩石中重新吸取一个新的原子。事实上，生物界的动物和植物们必须加速生长、繁衍、死亡的速率，唯有如此，才能避免原子的入不敷出。

见缝就钻是根的本性。当Y从母体岩脊中脱离出来自立门户时，一种动物恰好经过，开始按照自己的意志改造大草原，以建立新的游戏规则和秩序。一队牛群翻动着草原上的土壤，使其成为小麦这种植物繁茂成长的温床。借着小麦，Y得以展开每年一次的令人眼花缭乱而又头晕脑涨的旅程。

古老的大草原能够历经沧海桑田而永恒存在，全凭生存其上的名目繁多、种类多样的动植物。这些动植物彼此既合作又竞争，正是这种关系及生物链的潜作用造就了大草原的生生不息。然而，种植小麦的农夫却不懂得什么生物链，他们是纯粹的实用主义者，完全以有用还是无用画线。对他们来讲，只有小麦和牛是有用的。每当他们看到“无用”的鸽子在麦地不远处筑巢，唯恐会对小麦不利，他们会把鸽群清理得一干二净。而当麦椿象前来填补鸽群离开后的真空时，农夫们更加恼怒了。因为麦椿象不像鸽子那样很容易就范，它们太小了，根本无法完全消灭。再后来，农夫们失望地发现，土壤因为小麦的过度种植而变得松软，后来在雨水的冲刷下分崩离析，泥流成河。雨水的冲刷和麦椿象的袭击最终导致了麦田的荒芜。而Y也就随着它的伙伴们顺着泥流到了很远的地方。

当种植麦田的努力一败涂地以后，农夫们开始尝试从大草原的兴衰史中寻找经验和教训。他们开始养殖家禽以发展畜牧业、他们种植了紫苜蓿来吸取固存氮元素以增加草原的养料供应、他们还开始种植玉米，因为玉米的根茎很长，能够利用开发深层的土壤。

但是，农夫们养殖家禽、种植紫苜蓿和玉米，不仅仅是为了防止土地进一步流失，保护旧有的耕地，同时还是为了开发新的耕地，结果，后者并非防止土地流失的万灵丹，它们本身也需要固持。

因此，尽管农夫们想尽了办法，黑土地仍旧在慢慢流失。后来，防止土地流失的专家们建筑了堤坝和梯田来加固土壤；军事专家们建造了防洪堤和翼坝来防止洪水冲

刷土壤。结果，河水虽然不再泛滥，但是河床却慢慢升高了，堵塞了航运。于是，专家们又建造了一些巨大的蓄水池来疏导水源，这样，Y 就在其中的一个蓄水池暂时安了家。在短短一个世纪，Y 就完成了从岩石到河流的旅程。

初来乍到池塘的时候，Y 先后在水生植物、鱼和其他水禽体内驻扎过。但是，除了水坝之外，工程师们还建了下水道。沿着下水道，遥远山川河流的附着物都漂流而来。曾经附着在银莲花上一同迎接候鸟归来的原子，如今躺在油泞的污泥里，如同被囚禁的囚犯，困惑、混沌、无精打采。

在岩石丛中，根仍旧在孜孜不倦地见缝就钻；雨仍旧在断断续续地拍打着这片土地；北美鹿鼠仍旧珍藏着夏日的纪念品；毁灭了鸽子的老人们仍旧在津津乐道他们将鸽群赶得到处乱飞的壮举；黑白相间的水牛们仍旧在红色的谷仓之间进进出出，为各种各样的原子们提供着免费的交通用具。

旅鸽的纪念碑

为了纪念一个物种的消逝，我们竖起了一座纪念碑。这座纪念碑代表了我们的哀伤。我们之所以哀伤是因为再没有人可以见到那些凯旋之鸟成群疾飞的方阵，它们辟出了一条穿越 3 月天空的春之路径，它们将冬天打得溃不成军，不得不在威斯康辛州的森林和草场上全面退却。

那些年轻时代曾经见过旅鸽的人仍然活着；那些在初长成时曾经感受过鸽群带来的疾风洗礼的树木也仍然活着。但是，再过 10 年，也许只有最古老的橡树还有旅鸽的记忆。而随着时间的流逝，也许只有最最古老的山脉还能知道曾经有过旅鸽的存在。

当然，在我们的生物教科书中和历史博物馆中，我们会看到鸽子。但是，它们只是一些没有生命的图像或雕塑，对所有的痛苦与欢乐都将无动于衷。这些图像和雕塑，无法从云层中俯冲而下，惊得鹿儿四处逃窜；这些图像和雕塑无法震天价响地拍动翅膀，为结满坚果的树林喝彩；这些图像和雕塑无法在明尼苏达州刚刚收割完的麦田吃早餐，也无法享受加拿大的蓝莓。因为，它们没有值得紧迫的理由，更无法感受太阳的亲吻和风雨的吹打。的确，它们能永久性地存留在教科书和博物馆中，但却没有任何生命气息。

我们的祖先相较于我们而言，食不果腹、衣不避体，房屋也不能遮风挡雨，生活条件非常恶劣。他们一直在为生活条件的改善不懈奋斗着。但是，正是我们祖先的这种奋斗，剥夺了鸽子的生命权。我们现在之所以感到哀伤，也许是因为在我们的内心深处，我们并不确知生活条件的改善和鸽子生命权的被剥夺之间孰轻孰重。工业革命的进步大大改善了我们的生活，但是，鸽子给春天增添的无限光辉和万种风情，又令工业革命的所有成果望尘莫及。

自从达尔文首次提出物种起源学说以来，已经整整一个世纪了。现在我们知道了以前所有的拓荒者和先辈们所不知道的事情。原来人类像所有其他的物种一样，仅仅是漫长的生物进化历史中的一分子。这种新的认知，应该让我们对周围的生物有一种息息相关的同胞之情，继而产生一种和谐共存、共存共荣的宽宏之心。同时也会使我们惊叹于生物进化的漫长和持久。

总之，我们应该渐渐明了，经过物种的进化和优胜劣汰，人类暂时成为生物进化这艘轮船的船长。但是，人类的生存不能成为该艘轮船船长所追求的唯一目标。先前的人们之所以把人类的生存视作唯一的目标，纯粹是出于在黑暗的历史中摸索与奋斗的需要。

现在，我们应该觉悟和警醒了。但是我担心仍旧会有很多人不会明白。

一个物种去悼念另外一个物种的消逝，还是世界上有史以来的一件新鲜事。杀掉最后一只长毛象的克罗马侬人想到的只是即将到口的美味；射杀最后一只鸽子的猎人想到的只是他技艺的日益精湛；打死最后一只海雀的水手或许什么都没想。但是，现在的我们，却在为旅鸽的消逝而感到哀伤。如果换成是我们逝去了，现在的葬礼将是不复存在的。因为鸽子肯定想不到要去哀悼我们。所以，正是从这一点上，而不是从杜邦先生发明了尼龙袜、布希先生发明了炸弹上，我们可以客观地得出一个结论：人类是优于其他物种的。

这座旅鸽纪念碑就像一只栖息在悬崖峭壁上的鹰隼，年复一年日复一日地审视着这个宽阔的山谷。每年的 3 月，它会看到雁群飞过，听雁群诉说苔原地带更清澈、更冰冷、更寂寞水域的故事；每年的 4 月，它会看到紫荆花开了又谢；每年的 5 月，它会看到连绵不绝的群山上绽满了橡树花。它还会看到寻寻觅觅的鸳鸯在这些菩提树里寻找中空的枝干；金黄色的蓝翅黄森莺抖落河岸垂柳那金黄色的花粉；白鹭在 8 月的沼泽地忸怩作态；鸟鸣叫着划破 9 月的天空；山核桃等坚果“扑哧”一声掉入 10 月的落叶；冰雹把 11 月的树林打击得吱嘎作响。但是，它再也不会看到有旅鸽经过，因为鸽子已成为一个消逝的物种，在世界上销声匿迹了。独留下它这只用青铜器雕刻在岩石上的不会飞翔的鸽子在那里黯然神伤。以后的游客们通过阅读纪念碑上的墓志铭，也许会对鸽子了解个大概，但是他们的思绪却再不会随之飞扬。

经济道德学家告诉我们，悼念鸽子仅仅是一种怀旧心绪的体现。倘使捕鸽者没有除掉鸽子，农夫们出于自卫，早晚也会不得已除掉鸽子。

和那些独特的真理一样，这种说法是站得住脚的。但却不是因为人们宣称的那些理由。

旅鸽像是生物界的一场风暴。它就像是处于两个极端对立的电极——土地的养分与空气中的氧气——之间的一道闪电。每年，旅鸽在这片大地上上下穿梭，吸吮森林和草原上果实的养分，并在自己短短的一生中将其消耗掉。像其他所有的连锁反应一样，当鸽子的数目减少时，鸽子的存活也将变得困难。因此，当捕鸽者将鸽子猎杀得越来越少，拓荒者也不断地遏阻鸽子的养料和食物供应时，鸽子在生物界刮起的那场风暴就越来越弱，直至后来灰飞烟灭。

今天，橡树仍然在向天空炫耀其累累的硕果，然而旅鸽掀起的那场风暴却已停歇。而蠕虫和象鼻虫则不得不慢慢地、默默地担负起旅鸽曾经担负的生物循环的任务。

这里令人惊叹的不是旅鸽的消逝，而是旅鸽曾经经历了巴比特之前的那段漫长的悠悠岁月。

鸽子深爱着它们赖以生存的土地，它们靠着一种强烈的欲望维持生存。那种欲望是由对成串葡萄和成熟的山毛榉的食欲所催生的，也是由对时空的不屑和挑战的渴望所催生的。即便在威斯康辛州找不到免费的食物，它们到密西根州、拉布拉多半岛或是田纳西州去寻找，总是会如愿以偿的。鸽子所爱的是现实存在的东西，这些东西总可以在某个地方找到。为了寻找这些东西，鸽子只需要一片可供自由翱翔的天空以及挥动翅膀的意志力。

然而，去爱曾经存在而今不复存在的事物，却是另一件新鲜事儿。之所以新鲜，是因为大多数人和所有的鸽子都做不到这一点。将美国视作历史上的一个存在、把命运当成一个新的起点、在岁月的流逝中感受山核桃树的芬芳——所有的这些事情对我们来说都是可能的。要做到这些，我们也只需要一片自由的天空和缅怀过去的意愿和意志。因此，正是从这一点上，而不是从杜邦先生发明了尼龙袜、布希先生发明了炸弹上，我们可以客观地得出一个结论：人类是优于其他物种的。

弗朗波

不曾在荒野的河流中划过独木舟，或者只有在向导的指挥下才这么做过的人，常常以为在荒野的河流中划独木舟的价值，仅仅在于经历了新奇的事物，外加做了一项健康运动。直到我在弗朗波见到了两个大学男生之前，我也持有相同的观点。

洗好晚餐的盘子以后，我坐在岸边看对岸的一只雄鹿吃河里的水草。不久，鹿朝着上游抬起头，竖起耳朵，然后朝隐蔽处跳跃而去。

在河流的转弯处，雄鹿受了惊吓：原来是两个男孩乘着独木舟不期而至。男孩看到我们便设法靠近，想和我们打招呼。

“你们好。请问现在几点了？”接下来，他们开始解释他们的表坏了，有生以来

他们第一次遭遇了没有表、汽笛或是收音机对时的混沌。两天来，他们靠着太阳辨别时辰，甚至从中感到非常兴奋和刺激。一日三餐没人帮他们料理，他们从河中打捞小鱼小虾果腹，否则就要挨饿。划行途中没有警察指挥交通，提醒他们注意急流、险滩和暗礁。当他们误判天气状况或者是没有搭帐篷时，也没有屋檐可供他们遮风挡雨。野外露营时，也没有向导告诉他们哪里宿营可以享受整晚的微风、哪里宿营可以免受蚊蝇叮咬之苦。当然也没有人告诉他们哪些木材是无烟的清洁型燃料，哪些木材只会冒烟而无法取暖。

在我们的这两位年轻冒险家乘着独木舟顺流而下之前，我们基本了解到他们在这趟旅行结束后将要加入陆军。因此，他们此行的动机似乎很明显了。这趟旅行是他们对于自由的第一次也是最后一次尝试。因为它仅仅是在两种严格的生活——校园和军营——之间的一个小插曲。这种质朴、简单的野外之旅之所以令他们兴致高昂，不只是因为新奇，也是因为他们可以无拘无束地犯错。野地生活使他们深切感受到大自然的赏罚分明。明智之举会带来奖赏，愚昧之举会带来惩罚。这是每一个森林居民每天都要面对的铁律。当然，文明的进步成为大自然力量发挥的缓冲。从这个特别意义而言，这两个男孩是自食其力的。

也许，每一个年轻人都需要偶尔进行一次野地之旅，以便明白这种自由的意义。

在我还是个孩子的时候，我父亲就经常给我描述各种各样上选的营地、钓鱼区和森林，说它们“几乎和弗朗波一样棒”。而当我终于有机会单独划着独木舟来到这片带有传奇色彩的地域时，我却发现，作为一条河流，弗朗波并没有辜负我的期望，但是作为一片野地，它却大大不如预期。新的农舍、度假区和高速公路的兴建，大大箝缩了野地的范围。不但是越来越小，而且是越来越四分五裂。在弗朗波顺流而下，你的视野及感官会不停地交替变化。往往是你刚刚感觉到自己是身处在一片野地，接着你却会发现一个船舶停靠港，不一会儿的工夫，你又会发现你正处在农舍旁的一片牡丹花丛中。

这时，一只鹿安然地经过那片牡丹花丛，然后轻松地跃到河岸上。这才使我又找到了身处野地的感觉。接下来所经历的急流险滩更加深了我的那种感觉。但是，在你刚刚体验到野地的刺激和惊险时，你又会发现河流下游池塘边的一座原木合成的小木屋。小木屋有一个人造板屋顶，旁边有一个“欢迎光临”的告示牌和一个供下午打桥牌的铁棚。

保罗·班扬（译注：美国传说中的伐木巨匠，具有超人的能力）是个大忙人，他几乎没有时间去为子孙后代规划将来。但如果要他为子孙预留一片土地，以便其子孙能够了解北部森林的景貌，他很可能会选择弗朗波。因为这里不但有最优良的五针松，还有最好的糖枫、黄桦和铁杉。松林和硬木林在同一个区域同时繁茂地成长，无论是过去还是现在都是极其不寻常的。同时由于硬木成长需要的土壤较之普通的土壤肥沃，所以，弗朗波的松树比起普通的松树，其赖以生存的土壤也是非常肥沃的，故而长得

又粗又壮。再加上弗朗波地靠一条河流，能很方便地运送原木，因此在很早的时候，弗朗波的松树就开始遭受被砍伐的命运，这从随处可见的已经腐朽的粗粗的木墩便能看出端倪。唯有那些稍有瑕疵的松树才能逃过此劫。尽管如此，弗朗波仍然存活了大量的松树，它们敦实茂盛，有的高耸云霄，成为对弗朗波过去、现在和未来历史的活生生的绿色纪念碑。

砍伐硬木的开始要比砍伐松树晚得多。事实上，最后一家大型硬木砍伐公司刚刚在 10 年前才结束了它的运营。那家公司的原址成为今天这座被遗弃城镇的土地出售办公室。他们把土地卖给前来拓荒定居的满怀希望的人们。而这也标志着美国历史上一个时代的结束，即毫无节制地乱砍滥伐时代的结束。

就像在废弃营地的残羹冷炙中搜寻聊以为生的郊狼一样，弗朗波后伐木时代的经济也是在过去历史残留的基础上苟延残喘。砍伐制纸浆木材的工人们在伐木鼎盛时期残留的林地中寻找当时侥幸存留的小铁杉。拿着便携式锯木机的工人们则去捞取河床中的沉木。其中有很多沉木是在船流如织的运输繁盛时期落入河中的。当时少有人问津，如今却成了香饽饽。一排排沾着泥沙的木头被捞了上来，暂时晾晒在河岸边古老的停泊处。尽管每根木头都被水浸透了，但瑕不掩瑜，每根都是质地上乘的好木材，有的甚至价值不菲，因为如今北部的森林已经产不出那样的好松木了。伐木工从沼泽地中探寻着雪松，鹿儿则跟在他们身后，去吃雪松树梢上的叶子。总之，所有的人、所有的一切，都在靠着过去的残留物过活。

结果，所有的残留物都被搜刮得一干二净，以致于现在当人们想建造一栋原木小屋时，他们必须从爱达荷州或俄勒冈州的森林中锯下类似原木的木材，然后用货车运到威斯康辛州的森林。与此相比，“ 把煤运到新堡 —— 多此一举 ”（译注：新堡本身为重要的煤输出地）的歇后语似乎只能算是一个轻微的讽刺。

然而，河流的存在是无法改变的。班扬时代以来，仍有一些地方保持了野地的原始风貌，没有遭到改变。每天凌晨在汽艇鸣笛之前，我们仍旧可以听到河流在野地中吟唱；有几处幸运地逃过被砍伐厄运的林地，如今已收归国有。此外，还有相当数量的野生动物幸存了下来。例如河里的大梭鱼、鲈鱼和鲟鱼，在泥沼中繁殖的秋沙鸭、绿嘴黑鸭和林鸳鸯，以及高空的鹞、雕和渡鸦等等。另外，还随处可见到鹿儿在奔跑。可能是繁殖过多的缘故，在弗朗波漂流的两天里，我就数到了 52 只鹿。有时还能在弗朗波的上游地段看到一两只狼在那里逡巡。我还碰到了一个专门用陷阱狩猎的猎人，他说他见到了一只貂。尽管自从 20 世纪以来弗朗波就再也没有出产过貂皮。

在这些残留的原始资源的基础上，以弗朗波的河流为中心，威斯康辛州的自然资源保护部门从 1943 年开始重建了一个绵延 50 英里的野生资源保护区，以供威斯康辛州的年轻人游览和享用。这片野生资源保护区的母体是一片国有森林，但是在保护区的那条河流两岸是禁止种树的，同时也尽可能地减少道路修建的规划。慢慢地，自然资源保护部门以极大的耐心，有时甚至要付出很大的代价，收购土地、迁移农舍、防

止修建不必要的道路。总之是尽一切努力试图让时光倒流，重新回到原始野地的时代。

弗朗波的优质土壤，曾经孕育了最好的松林，近几十年来，它同样促成了鲁斯克郡乳制品行业的兴起。这些牛奶场的农夫们认为当地电力公司的供电费用过高，因此自发组织了一个合作社性质的农村电气化管理局。1947年的时候开始申请建一座水电站。但是，这座水电站一旦建成，将会破坏那片绵延 50 英里的野生资源保护区的下游地带。

于是，围绕着水电站要不要上马的问题，美国政界展开了一场激烈的辩论。那些立法院的议员们太屈从于农民的压力，以致于忘却了野地的价值。他们不但表决通过了农村电气化管理局要求建立水电站的议案，而且还剥夺了自然资源保护部门对于水电站建设地点的任何发言权。看来，弗朗波可供行使独木舟探险游历的河流以及野生资源保护区的所有河流，最终都要服务于发电这一目的。

而我们的子孙，由于不会再有机会接触原汁原味的纯野生的河流，自然也就不会有对在一条会唱歌的小溪中独自划独木舟探险的怀念。

死亡中的弗朗波

老橡树被剥了皮，死去了。

在废弃的农场，一切都濒临着不同程度的死亡。一些古老的房子执著地看着你，仿佛在说：“等着瞧吧，会有人搬进来的。”

但是，这座农场注定要荒弃。环剥橡树充当谷仓最后的收成，就像杀鸡取卵，是一种彻底的终结。

伊利诺州和爱荷华州

伊利诺州巴士之旅

一个农夫和他的儿子正在屋外的庭院拉动切割锯条，锯斧嵌在一棵古老的棉白杨中间。由于这棵树年代太久远，长得太粗壮，宽宽的锯条只剩下 1 英尺长的余量裸露在外，供他们来回拉动。

曾经有一段时期，那棵棉白杨是大草原上的一个标志。乔治·罗杰斯·克拉克（译注：1752～1818，美国军事领袖和拓荒者，独立战争期间在西北地区领导了多次对英国军队和美国土著人的袭击）也许曾经在其下宿营；野牛也可能在树下边乘凉边驱赶蚊蝇的叮咬。每年春天，旅鸽在它茂密的树叶里筑巢栖息。同时，它还是州立大学所缺乏的最好的历史图书馆。但是，每年总有一段时间，它飘落的棉絮会堵塞农夫的纱

窗。而在农夫眼中，后者显然是难以容忍的。

州立大学的学者也告诉农夫，榆树不会飘落棉絮，自然也就不会堵塞纱窗，因此种棉白杨不如种榆树。对于樱桃蜜饯、班氏杆菌病、杂交玉米、农场的美化等等，这些学者也自以为是地在那里高谈阔论。但是，他们对农场的起源和历史却一无所知。他们的工作只是要把伊利诺州变成大豆生长的天堂。

我此番是坐在一辆时速60英里的巴士里开始旅行的。这条高速公路的雏形原本是为了马车的通行而修建的。后来，混凝土铺设的范围越来越宽，直至田野的栅栏几乎要倾倒在路边的沟渠里。慢慢的，伊利诺州的原型 —— 广袤的大草原被侵蚀成如今的样子。到处都是宽阔的马路，唯有残留的田野栅栏和狭长的草皮能提醒我们，这里原来是一片草原。

巴士上其他的人都没有发现这些遗迹。一个神情焦虑的农夫怀揣着土壤肥料的账单，茫然地看着羽扇豆、胡枝子或者是赝靛，他并不知道这些植物本是从大草原吸取氮元素，然后将其注入他的这片黑土地的。他也无法把这些植物同其周围郁郁葱葱的偃麦草区别开来。我想，如果我问他为什么他的庄稼有如此好的收成，能达到 100 蒲式耳，而草原以外的各州能达到 30 蒲式耳就不错了，他可能会回答说伊利诺州的土壤比较肥沃。如果我再问他缠绕在栅栏上、开着豌豆样的白色穗状花的植物是什么，他可能会摇着头说：也许是杂草吧。

车窗外掠过一片公墓，公墓周围点缀着在阳光照射下闪闪发亮的草原紫草。除了这个地方，在别处是没有草原紫草的。茴香和蓟菜为如今这片日趋现代化的土地增添了黄色的图案，而草原紫草只能属于死者。因为也许只有已逝去的人才有可能认得它们。

打开车窗，我听到一只高原鸟动人心弦的鸣叫。曾经，它的祖先跟在一头水牛的后面，在开着齐肩高的一望无垠的花海中跋涉。如今人们却已经淡忘了花的名字，也淡忘了鸟的名字。看，一个男孩指着鸟对他爸爸说，那里有一只鹬。

这时，一个路牌上写着：欢迎光临绿河土壤自然保护区。牌上以较小的字体列出了这个保护区共同经营者的名单。但是因为字太小了，而车又在行驶当中，我无法看清名单的具体内容，但我想那必定是与自然资源保护有关的名人录。

路牌上的字写得很工整，树立在小溪下游的草场上。草场上的草很矮小且平

坦，足可作为高尔夫球场地。旁边是一个干涸的古老河床，呈现出一条优美的曲线。新的河床被打造得笔直，像一把直尺。因为该郡的工程师认为笔直的河床才有利于河水的宣泄而不致泛滥。背后的山上有依山势辟成的带状耕田。它们被打造得弯弯曲曲。因为防止土壤流失的工程师认为，这样可以缓和水势。一会儿笔直一会儿弯曲，河水肯定都被这些工程师们搞糊涂了。

这座农场上的一切都象征着银行里的金钱。农场上有许多新的油漆、钢铁和混凝土。谷仓上的日期是为了纪念这座农场的缔造者而设的。房屋的顶部安装有避雷针，风向标因镀了金的颜色而趾高气扬，甚至连这里的猪也沾了喜气和福气而显得与众不同。

森林里的老橡树没有繁衍后代，也没有树篱、矮树丛、篱笆或其他不中用的耕作痕迹。玉米地里有肥壮的公牛，但是可能没有鹌鹑。篱笆树立在狭窄的小道两边，即便如此，农夫们也还尽最大可能地利用每一寸土地，耕作到离带刺铁丝网近得不能再近的地方。他们肯定会说：“没有浪费才没有匮乏。”

在小溪下游的草原上，洪水冲来的垃圾高高地堆积在灌木丛中。小溪的堤岸被冲刷得破败不堪。伊利诺州原来的地形地貌被洪水慢墁地侵蚀流逝，逐渐湮没在大海里。广阔的豚草场成为一个分水岭，标志着洪水最终无法载动泥沙而放弃的地点。因此，到底什么才是有利可图？而这种状况又能维持多久？

高速公路就像延伸在玉米田、燕麦田和苜蓿田中间的一把卷尺。巴士快速前进着，将丰腴的土壤抛在后面；旅客们在车内兴高采烈地交谈着。都谈些什么呢？原来是关于棒球、税收、女婿、电影、汽车和葬礼。但丝毫没有谈及车窗外不断涌现的伊利诺州的风貌。在他们看来，伊利诺州没有起源、没有历史、没有浅滩和深渊，也没有潮涨和潮落。伊利诺州仅仅是他们旅程的一部分，是他们借以通向目的地的工具。

挣扎的红腿

当我回忆自己最早的记忆时，我总在想，一般人们所称之为“成长”的过程，事实上是否是一种“倒退”的过程；而在成人眼中认为是孩子们最缺乏的生活经验，事实上是否是在用生活中的琐碎事务来冲淡生活的真谛和最根本的东西。但至少有一点是可以肯定的：我对于野生动物以及狩猎的最早的印象，至今仍栩栩如生地存留在我的脑海中。半个世纪过去了，我也接受了五十多年的关于野生动物知识的专业训练和熏陶，但所有的这些，既无法磨灭我最初形成的印象，也无法给我最初形成的印象锦上添花。

像大多数雄心勃勃的猎人一样，在我小时候，我获得了一把单管猎枪，并被允许出去打兔子。一个冬天的星期六，我准备去我经常去的兔子出没频繁的地方打猎。路上我发现当时覆盖着冰雪的湖面出现了一个小“气洞”。风车正在把温水源源不断地从岸上排进去。那时，所有的野鸭应该早就飞往南方避冬了，但是此情此景，我仍旧

做了有生以来第一次关于鸟类学的假设：如果这里还有一只野鸭未曾离开，那它早晚都会来这个气洞造访一番。于是，我极力压制了打兔子的欲望（那并不是一件容易的事），坐在冰冻的荨麻草地上，等待野鸭的出现。

我整整等了一下午，眼巴巴地看着一只只乌鸦经过，就是不见野鸭的影子。转动的风车发出风湿病人似的呻吟，我也越发觉得寒冷。终于，在黄昏时分，一只孤独的绿嘴黑鸭从西方的天际飞来，看到气洞以后，几乎是毫不犹豫地就直冲而去。

我已记不清自己是如何开枪的，我只记得当时我是难以名状的兴奋和喜悦。我的第一只野鸭重重地跌在冰冻的湖面上，肚皮朝上躺在那里，一双红腿在那里挣扎。

记得父亲给我那把猎枪的时候，他对我说我可以用它打鹌鹑，但是我不能从树上打它们。父亲说，我已长大了，可以射击飞行中的猎物。

但是，我的猎狗擅长把鹌鹑赶到树上，而我所被灌输的第一条道德准则就是要放弃树上可以稳稳射中的鸟，去选择毫无打中希望的逃亡中的鸟。与逃到树上的鹌鹑相比，魔鬼和他的七个王国只能是一种轻微的诱惑。

在我第二个打猎的季节即将结束的时候，我仍旧是一无所获。有一天，我经过一片白杨树丛，惊起了一只大鹌鹑。它惊叫着从我的左边跃起，跌跌撞撞地飞过白杨树丛，从我的背后向最近的雪松树林逃窜。我下意识地开枪射击，结果这一击成为众多猎人梦寐以求的一击。伴随着羽毛和金黄色树叶的飘零，鹌鹑翻转着跌落到地上，令我心醉神迷。

直到今天，我仍旧可以清晰地描绘出当时的场景。包括鹌鹑掉落处的每一丛御膳桔和每一株紫苑，我都能记得一清二楚。那可是我射中的第一只飞行中的鹌鹑！而我对于御膳桔和紫苑的喜爱，大概也是源于那个时候吧。

亚利桑那州和新墨西哥州

山顶

我最初定居亚利桑那州的时候，白山还是一个骑马人的世界。除了仅有的几条主道外，其他的地段都崎岖不平，马车难以通行。那时候没有汽车，再加上地域广大，不适合徒步行走，即便是牧羊人也骑着马。因此，排除了汽车和马车，这个名叫“山顶”的高原郡便成为骑马人独享的领域。骑马的牧场主、骑马的牧羊人、骑马的林务官、骑马的猎人以及那些经常游走在边界地带的来历不明、目的不清的无法分类的骑马者，便是当时“山顶”所有的活动主体。对于我们现在的年轻一代来讲，很难想像根据交通工具竟然也能把人从空间上分成不同的阶层。

从亚利桑那州往北走两天的距离，会到达一个铁路城镇，那里的情形就截然不同

了。你可以选择各种各样的旅行方式，包括穿着皮鞋步行、骑毛驴、骑牧羊马、坐四轮马车、坐货运马车、坐火车的硬座或者是坐卧铺车厢。每种旅行方式基本对应着一种社会阶层。不同的社会阶层说着不同的方言，穿着不同的服饰，吃着不同的食物，光顾不同的酒吧。他们之间唯一的共同点就是受惠于当地的杂货店，共享亚利桑那州的空气和阳光。

但是，如果你回转向南，穿过平原和平顶山，向白山挺进，这些不同的旅行方式就会因无法通过而一个接一个地被淘汰，直到最后，“ 山顶 ” 成为骑马人的天下。

当然，亨利 · 福特的发明引发了交通运输界的一场革命，飞机的出现克服了地形地貌给交通带来的各种困难和阻碍。今天，无论是谁，都能享有遨游天空的权利。

冬天的山顶是无法逾越的，即使是骑马人也望而却步。因为雪厚厚地堆积在高耸的草原上，攀爬小峡谷的唯一登山小径也堆满了积雪。5 月份的时候，每个小峡谷都奔泻着融化的雪水，隆隆作响。再过一段时间，如果你的马敢在齐膝深的泥水中跋涉半天的话，你就可以重新攀爬山顶了。

每年春天，在白山山脚下的一个小村落里，都会进行一场约定俗成的比赛，看谁能第一个骑马登上山顶。我们许多人都尝试过这样的比赛。至于为什么去参加，谁都没有细想过原因。也许是村里有一条不成文的规定，即无论是谁最先挑战了山的极限，他就是村里本年度的风云人物。

山顶的春天并非像故事书中描绘的那样，而总是姗姗来迟。即使是在羊群开始到山上吃草以后，温和的天气也总是夹杂着刺骨的寒风。在灰暗的山地上点缀着零星的几只意兴阑珊的母羊和瑟瑟发抖的小羊羔。它们在寒风呼号的雪地里艰难地觅食。即便是欢快的星鸦也不得不在春天的寒风中蜷缩起翅膀。我想我很少能看到比这更寒冷的场面了。

山顶的夏天天气更加变幻无常。就连那些反应最迟钝的骑马人以及他们的马匹都能深切地感受到这一点。

一个晴朗的早晨策马上山，难得的好天气和好景色会让你产生从马上下来，在新生的草地与花朵间打滚的冲动（如果你不拉紧缰绳，你那匹生性好动的马可能真会这样做）。似乎一切有生命的东西都在那里歌唱、欢叫、拼命成长着。数月以来饱受风雪肆虐的巨大的雪松和冷杉们，释然持重地沐浴在阳光下。面无表情的缨耳松鼠用它的嗓音和尾巴流露出它难以抑制的欢快。它似乎在喋喋不休地告诉你一个你早已经知道的事实：今天的天气实在是太好了，从没有哪一天可以如此骄奢地过活。

然而，一个小时以后就可能会乌云盖顶，你先前所处的天堂似的美景会在即将到来的暴风雨、闪电和冰雹中黯然失色。阴沉沉的灰暗笼罩在你的头顶，给你一种置身在引芯已经点燃的炸弹之下的感觉。狂风刮起卵石和树枝，你的马儿焦躁不安地跳跃着，试图躲过这些不速之客。当你在马鞍上转身想披上雨衣的时候，马儿会受到惊吓，呼哧呼哧喘着粗气，浑身战抖着，仿佛你不是在披雨衣，而是在揭开一场大灾难的序

幕。因此，每当我听到别人说他不害怕电闪雷鸣时，我会很不以为然。我会在内心里说，他肯定没有骑马到过 7 月的白山。

电闪雷鸣已经够可怕了，更可怕的是雷电击中岩石所爆裂的石头碎片，呼啸着在你耳边划过。而更更可怕的是松树在电击之下会四分五裂。我印象最深刻的是，有一次，一片长约 15 英尺的闪亮的木片飞溅而来，深深插入我脚前的土壤，就像一把刀叉立在那里。

经历是一笔财富。没有遭受过惊吓的生活必定是贫乏的。

山顶上是一片巨大的草场，骑马横越要走上半天。但请不要把它想像成四周种着松树的一片单纯的圆形草场。因为草场的边缘毗邻的是数不清的河湾、岬角、半岛或者是公园，故而呈现出不规则的涡形、曲形或是锯齿形。而且这些河湾、岬角、半岛和公园各不相同，没有人能完全辨识得清楚。每天骑马到山顶，你都会有新的发现。说它“ 新 ”，还是因为你经常会有这样一种感觉，当你骑马来到一片繁花似锦的河湾，你会断定如果此前有其他的人曾经来过这里，他肯定会为此地赋诗一首或作曲一支。

今天的人们如果看到那样的景色，定然会觉得不可思议，继而争先恐后地留念。或许这可以解释在山顶的每一个营地周围，白杨树坚韧的树皮上，会留下名字、日期的刻痕和牛的烙印的原因。无论哪一天，你都能从这些刻痕和印记中读出“ 德州人 ”的历史和他们的文化。当然，这里说的历史和文化不属于严格的人类史的范畴，它们所涵盖的仅仅是某些前辈的个人生涯史。也许你能从那些镌刻的姓名中认出：某某人的儿子在一次马的拍卖中击败过你、你曾与某某人的女儿共舞一曲等等。这一棵树上刻着某人名字的首字母，旁边注明时间是在 90 年代，毫无疑问是说那时他曾经作为一个巡回的牛仔单独来过山顶。接下来刻的内容是：10 年之后，他成为一个有着稳定收入来源的公民，事业小有所成。至于原因没有详细注明，可能是因为节俭、自然增值或者是其他的原因。再接下来刻的内容仅是时隔几年，他女儿的名字被某些追求者刻在了树上。他们不但是想获得女子的芳心，也是觊觎那笔可观的财产。

现在那个老人已经辞世。在他的晚年，只有他银行的账目和牛羊的数目能让他志得意满。但白杨树皮上的镌刻，则历历显示了他青年时代曾心驰神往于白山春天的美好。

白山的历史不仅记载在白杨树皮上，也反映在它的地名上。“ 产牛之地 ”的名称虽

然猥亵、幽默、滑稽甚至有些感伤，但是绝不会过时。通常它们都很耐人寻味，能引发新来者的好奇心和求知欲。而往往刨根究底的结果是，能引出一连串的故事和传说。

举个例子来说，有个地方叫“骨场”，本是一片美丽的草场，然而却在蓝铃花盛开的地方，夹杂着半掩着的牛的头骨和散落在各处的牛的脊椎骨，而且这些牛已经死去好久了。事情要追溯到19世纪80年代，一个愚蠢的牧羊人从温暖的德克萨斯山谷来到这片地方。由于过度迷恋白山夏日的诱惑，他试图让牛群依赖山里的干草过冬。结果，11月的大风雪袭来的时候，牧羊人完全措手不及。除了他和他的马匹仓皇逃出以外，他所有的牛都葬身在那里了。

再比如，有个地方叫“坎贝尔蓝河”，位于蓝河的上游地段。早期有一个牧羊人带着新婚的妻子来到那里，但是妻子很快厌倦了只和岩石、树木打交道的枯燥生活，她非常渴望能拥有一架钢琴。牧羊人满足了妻子的要求，很快订购了一架钢琴，牌子是“坎贝尔”。全村只有一头骡子能驮得动那架钢琴，而且只有一个包装商能巧妙地将钢琴平衡固定在骡子身上，完成这件几乎只有超人才能完成的工作。但是，钢琴并没有给新娘带来满足，她最后还是离开了那个地方。当我听说这个故事的时候，牧羊人原来居住的房屋早已成为一片废墟了。

还有一个地方名叫“菜豆沼泽”，是一片环绕着松树的沼泽草地。那里有一间原木做的小木屋，供四面八方的游客晚上宿营之用。并且那里有一条不成文的规定，凡是像这样的房屋的主人都要尽己所能为游客准备面粉、猪油和大豆，而在那儿宿营过夜的游客也要尽可能地补充给养，供以后的游客使用。但是有一个运气不佳的游客，因为暴风雪在那里困了一个星期，结果他在小木屋里只发现了菜豆。这种失礼的待客之道很快便传开了，后来“菜豆沼泽”便成了那个地方的绰号。

最后还有一个地方叫作“天堂牧场”。如果你从地图上看到这个地名，你会觉得名字起得实在是陈词滥调，毫无新意。但是当你辛辛苦苦骑马来到其所在地时，你顿时会眼前一亮，“果然名不虚传”。天堂牧场隐藏在一座高耸山峰的背面，像所有的天堂都应该具备的那样。一条盛产鳟鱼的小溪丁丁冬冬地流淌在碧绿的草地上。一匹滞留在草地上长达月余的马被养得肥胖，以致于积聚的雨水在它的背部形成了一个小水洼。记得我第一次来到天堂牧场的时候，禁不住发出感慨：还能有什么更贴切的词汇来形容这样的美景呢？

尽管后来有过几次机会，但我再也没有回过白山。我不想见到游客、道路、锯木场、载运原木的铁路等等给白山带来的改变或者说是破坏。我听到一些年轻人（他们在我第一次骑马到白山的时候尚未出生）夸赞白山是个美妙的地方，对此，我还是比较赞同的，但在内心深处，仍有所保留。

像大山一样思考

一个发自肺腑的低沉而又尖厉的号叫在大山深处回荡，最后划过大山，消逝在远方深沉的夜色中。这声号叫爆发出一种充满野性和反抗的哀愁，爆发出对世界上一切逆境的蔑视。

大山中所有的生物（可能也包括许多死去的生物）都侧耳倾听着这声久久回荡的号叫。对鹿而言，它意味着死亡近在咫尺；对松树而言，它意味着半夜暴风雪来袭的警告；对郊狼而言，它意味着有残肉可食的许诺；对牧牛者而言，它意味着银行透支的威胁；对猎人而言，它意味着獠牙对子弹的挑战。然而，在这些比较容易察觉的希望与恐惧的背后，号叫还隐藏着更深层的含义，但是只有大山才能听得懂。因为只有大山才有沧海桑田的岁月与见识，能够客观地聆听狼的号叫所隐藏的深意。

而那些无法领会其中深意的，也能感觉到它的存在，而且在所有的狼出没的地方都能感受得到。这种异样的感觉也使那些地区与其他地区区别开来。所有在夜晚听到狼号或是白天看到狼的踪迹的人，都会不自觉地背部发毛，脊部发冷。即使没有听到狼号或是看到狼迹，也可以从许多异样的情景中感知一二。比如说一只驮货之马半夜的嘶叫、石头刺耳的滚动声、逃亡之鹿奔跑的慌张以及云杉树下诡异的阴影等等。只有那些初出茅庐的新手才无法感知狼的存在，也无法理解只有大山才能体会的那种深奥。

我对上面的说法深信不疑，是源自于我曾亲眼看到一只狼死去。那日，我们正在一个高高的悬崖上野炊，悬崖脚下有一条汹涌澎湃的河流。我们看到了一个东西在急流中挣扎跋涉，胸部浸在白色的水花中。我们原以为是只鹿，但等它艰难跋涉上岸，向着我们的方向抖落身上的河水时，我们才发现它原来是只狼。这时，6 只显然已经长大的狼崽欢快地摇着尾巴，相互打斗嬉闹着从柳树丛中跳跃出来，表示它们的欢迎。的的确确，在我们所处的山崖脚下的空地上，我们看到一群狼在那里翻滚打闹。

在那段日子里，没有人会错过射杀狼的机会。很快，一发发子弹射入狼群。但是由于我们太兴奋了，再加上我们都不知道怎样才能瞄准向陡峭的山下射击，所以我们的枪法都不是很准。结果在我们的子弹消耗殆尽时，只有那只老狼倒下了，还有一只小狼拖着受伤的腿躲进了山崩造成的人类无法通行的岩石堆。

我们接近那只老狼的时候，它眼中那绿色的充满仇恨的目光还没有完全消逝。正是在那时，我忽然明白了某种道理，某种只有狼和大山才知晓的道理。但是在那之前，我太年轻气盛，总有扣动扳机的冲动。当时我认为狼群的减少会意味着鹿群的增加。而狼群的消失则意味着猎人天堂的到来。但是自从我看到那只老狼眼中渐渐消逝的仇恨的目光时，我才感到无论是狼还是大山，肯定不会认同我以前的那种想法。

自那以后，我看到各州都在相继扑灭自己的狼群。我看到了一座座刚刚扑灭狼群的大山的面貌；看到了山的南坡被鹿群踩出的纷乱的小径；看到了所有能吃的灌木、

草甚至是细枝嫩芽都被吃得一干二净，而这些植物因而也很快衰弱不振，不久便告死亡；我也看到了所有能吃的树叶，只要是鹿能够得着的地方都被吃得精光。看到这样的一座山，你会感觉是有人给了上帝一把剪刀，让他整天除了剪除树木以外，什么都不做。后来，鹿群由于数量过于庞大，再加上草木供不应求，便大批量地饿死了。它们的白骨与死去的鼠尾草一起趋于腐朽。

现在我想，就像鹿群生活在狼群的阴影和恐怖中一样，大山也生活在鹿群的阴影和恐怖中。然而两种恐怖又是不同的。鹿被狼吃掉，两三年后很快就会有新的小鹿出生繁衍，但是，一旦大山被鹿群毁灭，恐怕几十年也无法恢复原貌。

牛也是这样，牧牛人在清除狼群的时候只会顾及到牛群眼前的安全，他却不能意识到其实他正在做着本质上如同狼吃牛一样的工作，只是牛群减少的直接原因和形式不同罢了。牧牛人还没有学会像大山那样去思考。其结果，沙尘暴出现了，河流将我们的未来无情地冲入大海。

我们都在努力追求安全、繁荣、舒适、长寿和单调的生活。鹿用它柔韧的双腿去追求；牧牛人用陷阱和毒药去追求；政治家用口诛笔伐去追求；大多数人则是用机器、选票和金钱去追求。但不管形式如何迥异，目的只有一个，那就是追求时代的和平。在这些方面取得某种程度的成功是件好事，客观地说也是必要的。但是从长远来看，太多的安全似乎只能适得其反。也许这正验证了美国作家亨利·戴维·梭罗的一句话，“野地里蕴涵着对于世界的救赎”。也许，这就是隐藏在狼的哀号背后的深层含义。大山早就明白了这个道理，只可惜很多人还是不明白。

艾思卡迪拉山

生活在亚利桑那州，会感到处处受局限。脚底是格兰马草原，头顶是蓝天，地平线处是艾思卡迪拉山。

向白山的北部骑马驰骋，低头俯视，是一望无垠的蜜色平原；抬头仰望，无论何处、无论何时，映入你眼帘的总是艾思卡迪拉山。

向白山的东部骑马驰骋，你穿越的是一片树木繁多、令人眼花缭乱的平顶山。而每一棵树又似乎独成一个小世界。浸浴在阳光下，散发着桧属植物特有的芳香，上面还有鸟儿唧唧喳喳的鸣唱。但是，当你策马来到山脊的时候，你会立刻感到自身的渺小，仿佛浩瀚大海中的一滴水珠。而白山的边缘即是艾思卡迪拉山。

向白山的南部骑马驰骋，你会遇到蓝河那些错综复杂的峡谷，峡谷里随处可见白尾鹿、野火鸡和更狂野的牛。当一只狡黠的雄鹿从你的枪口逃脱，消失在地平线上向你回首炫耀胜利，你低头查看枪的准星并在纳闷究竟是怎么回事时，你会发现远方深蓝色的群山，那便是艾思卡迪拉山。

向白山的西部骑马驰骋，你会置身于阿帕契国家森林的林海当中。我们在森林中

巡行，以 40 为单位数着那些高大松树的数目，将它记在随身携带的笔记本上，并设想如果把它们锯成原木，会堆积成什么样子。当我们气喘吁吁地来到一个峡谷，我们忽然有了一种奇怪的感觉，那就是觉得笔记本上假设的原木堆与我们的汗流浃背、皂荚的芒刺、斑虻的叮咬以及吵闹的松鼠之间非常不相称和不协调。一个遥不可及，一个却近在咫尺。然而，当我们到达下一个山脊时，一阵凉风袭来，在绿色的松林中呼啸，我们的这些奇怪的感觉也一扫而空了。悬在山脊远方的，便是艾思卡迪拉山。

大山凭借其自然之险，不但局限了我们的工作和娱乐范围，也直接影响到我们晚餐的质量。冬天的夜晚，我们经常试图在河边的低地埋伏捕捉野鸭。而机警的鸭群不会轻易上当。它们在西边的晚霞和北边铁青色的夜色中盘旋几周，然后就消失在黑漆漆的艾思卡迪拉山里。如果它们再次出现并停留在河边的低地上，那么我们的烤锅里就会多一只肥腴的美味野鸭。但是如果它们不再出现，那么我们只能再次将就熏肉和大豆了。

实际上只有一个地方，你无法在地平线上看到艾思卡迪拉山，那就是在艾思卡迪拉山山顶。在那里你看不到山的本身，但是你却能切实感受到它的存在。其原因就在于大熊。

这位大脚老兄好比一个强盗发家的男爵，艾思卡迪拉山就是它的城堡。每年春天，当温暖的春风融化了山里的积雪时，老灰熊便从它冬眠的岩洞中慢慢地爬出来，一路寻觅着，向山下拱去。结果，一头牛不幸成为它的猎物，牛的头部被灰熊击得稀烂。在酒足饭饱之后，灰熊又重新爬回它峭壁上的洞穴，在那里靠着土拨鼠、蹄兔、浆果和树根等安然地度过夏天。

我曾经目睹过一次灰熊杀死牛的过程，十分血腥。牛的头盖骨和脖颈全都爆裂了，那惨状仿佛是牛迎面撞上了一辆急驰的运货车。

我所认识的人当中没有谁曾亲眼见过那头灰熊，但是在悬崖脚下、早春泥泞的土地里，你会看到它的足迹。尽管不可思议，但却是个真实的存在。看到这些足迹，即便是那些头脑顽固的牛仔也不得不相信真的有熊。无论他们策马到哪里，他们总会看到那座山；无论他们什么时候看到山，他们总会想到熊。在篝火边的谈话，他们会谈到啤酒、舞会，也会谈到熊。大脚灰熊一年只吃一头牛，其占据的地盘不过区区废弃岩石堆堆出的几平方米的面积，但是全区都能感受到它的存在。

那时，追求“进步”的风气也开始蔓延到这个养牛的村郡。而进步的拓展，是有着各式各样的使者的。

首先到来的是横跨美国各州行驶的汽车驾驶者。牛仔们与这个道路驯服者是有共同语言的。因为那个道路驯服者和这些野马驯服者一样，都喜欢大声活泼而又虚张声势地讲话。

但是牛仔们不大明白那个身着黑色天鹅绒服装的漂亮的操着波士顿方言的女士口中所宣扬的妇女选举权是怎么回事。不过，出于礼貌，他们还是瞪着眼睛仔细倾听她

的谈话。

牛仔们也讶异于通讯工程师在松树上架设天线，接着便能瞬间接收到来自远方城镇的讯息。一位老人好奇地问，电线能不能给他带来一块熏肉。

一年春天，“进步”派来的使者是一位政府雇佣的捕兽者。他就像圣乔治一样，随时准备捕杀猎物，唯一不同的就是前者为政府雇员，身着工作服。捕兽员问这里是否有任何带危险性的动物需要捕杀，人们答道：是的，有一只大脚灰熊。

捕兽员将行头捆在骡子背上，便向艾思卡迪拉山进发了。

一个月后他回来了，他的那头骡子因不堪重负而步履蹒跚。村镇里只有一个谷仓比较大，能够容纳晾晒兽皮。一个月间，捕兽员想尽了一切惯常使用的办法，包括铺设陷阱、放置毒药等来捕杀熊，但都无济于事。后来，他在一个只有熊才能经过的隘口上架设了一把上了膛的猎枪，然后在旁边“守株待兔”。结果，那只熊走入隘道，自己结束了自己的性命。

事情发生的时候正值6月份。那时的熊皮既肮脏又斑驳，没有多少价值。没有让最后一只大脚灰熊留下像样的毛皮作为它所属物种的纪念，对于我们何止是简单的羞辱？灰熊消逝了，唯一留下的就是在国家博物馆它的那具头骨，再就是科学家关于那具头骨拉丁文名称的讨论和争辩。

也正是在我们对这件事有了严肃的思考以后，我们才开始发问：究竟是谁为“进步”下的定义？谁赋予他的权利？

自从上帝创造世界以来，岁月就在侵蚀着艾思卡迪拉山玄武岩质地的躯体。它在侵蚀着，同时又在等待着、建造着。岁月在这座古老的山脉共建了三种东西：庄严的形貌、生物群落和一只大脚灰熊。

那位政府雇佣的捕兽者只知道消灭了大脚灰熊以后，艾思卡迪拉山的牛群们就可以安枕无忧了，殊不知他已经颠覆了一座大厦，而这座大厦从有时间记载起就开始建造了。没想到到他这里，面临大厦将倾的命运。

授意派遣那位捕兽员的政府部门主管是一位生物学家，精通生物进化理论。但是他没想到大山本身的保护与保护牛群同等重要。他无法预见20年后这座产牛的村郡将会成为一座旅游

城市，对于游客来说，他们更希望能看到熊，而并非能吃到牛排。

那些投票支持拨款消灭熊的国会议员们，正是拓荒者们的儿子。他们称许父辈们吃苦耐劳的优秀品质，但他们却在用自己的行动来毁灭着这些优秀品质所凝聚的成果。

我们这些林务官对于熊的被灭杀持一种默许的态度。我们知道当地的一个农场主在犁地的时候发现了一个刻有科罗纳多指挥官姓名的匕首。我们曾严厉谴责那些为了追求黄金和改变他人信仰而滥杀无辜的印第安土著居民的西班牙侵略者。但我们却未曾意识到，其实我们也是一种侵略者，只是当局者迷，我们太过自以为是罢了。

艾思卡迪拉山仍旧巍然屹立，但是你再看到它时不会再联想起熊。它现在只是一座山，一座普普通通的山。

奇瓦瓦和索诺拉

瓜卡马亚

在自然科学中，美学仍是一个人们涉足未深的领域，甚或是一个盲区。即便是研究弯曲空间的科学家，也不曾解出它的方程式。举个例子来说，每个人都知道北部森林的秋天地景无非是一片土地、红色的枫树以及有环状羽毛的松鸡。从传统物理学的角度来看，松鸡仅仅代表一亩土地质量或是能量的百万分之一。但是一旦除去松鸡，所有的一切便失去了意义。因为某种动能失去了，其可能引发的无穷能量也便随之失去了。

也许你很容易提出这样的疑问：上面所提到的损失仅是我们假想的结果，但是有没有严肃的生态理论方面的论证和支持呢？其实，生态学家很清楚，曾经有一种“生态死亡”的说法，其意义是当代科学术语所无法表达的。哲学家将事物这种无法衡量的本质称为物质的“灵魂”。它正好与物质的“现象”一一对应。物质的“现象”是可以表达和预测的，即便是对太空中距离最远的星星的旋转和运动也是可以描述的。

北部森林的灵魂是松鸡，山胡桃木丛的灵魂是蓝松鸭，青苔沼泽地的灵魂是加拿大噪鸦，而长满刺柏的山麓丘陵的灵魂是冠蓝鸦。鸟生物教科书上没有记载这些事实。我认为这些事实对于鸟生物科学来讲是全新的，不管这些事实对于那些敏锐的科学家而言，是多么的显而易见。无论如何，我在这里要描绘一下我所发现的马德雷山的灵魂——厚嘴鹦哥。

人们说它是一个新发现，只是因为很少有人曾亲身光顾过它出没的地方。一旦到了厚嘴鹦哥栖居的地方，除非聋子和盲人才无法感知它在大山的生态和景貌上所扮演的重要角色。确实，在你还没有吃完早餐的时候，这些唧唧喳喳的鸟儿就开始离开它们位于悬崖峭壁上的窝巢，向着黎明的太阳欢快地飞舞。它们也像鹤群那样形成方

阵，盘旋舞动着，同时还在高声鸣叫着争论一个问题：这个慢慢越过峡谷而到来的一天，是否比以前更湛蓝，更晴朗。争论的结果是一半对一半，胜负难辨。然后，它们分成不同的队伍飞到高耸的平顶山上吃早餐——壳已裂开的松果。这时，它们还没有发现你。

但是不一会儿，当你离开峡谷，沿着陡峭的山路向上攀爬时，一些眼尖的鹦鹉，哪怕它们是在1英里开外，也会发现你这个不速之客。因为原本只有鹿、狮子、熊或者是火鸡才能通行的道路如今出现了一个奇怪的东西。于是，它们忘记了吃早餐，随着一声声鸣叫和呼啦啦扇动翅膀的声音，一群鹦鹉便朝向你飞来。它们在你的正上方盘旋，那绚丽的色彩令你惊呆，那情形使你恨不得有一本介绍鹦鹉的词典在手，以弄清楚它们的名称和特性。它们在那儿喧嚷着，似乎在问你来这儿做什么？它们又像一个鸟类公会，想知道你相对于其他地方是不是更欣赏它们家乡的美丽、喜欢它们这儿的气候和“公民”、看好它们将来的发展前景等。或许这两种因素都有吧。而也就是在那时，我脑中突然闪现了一个不祥的预感：当盘山道路修好以后，热情的鹦鹉公会遭遇持枪的游客或猎人来访时，后果将会怎样呢？

很快，鹦鹉们发现我是个笨嘴拙舌、反应迟钝的家伙，不但对它们的疑问无法做出回答，而且对它们的热情连吹个口哨的回报都没有。于是，它们继续去吃早餐。毕竟，森林里裂开的坚果并不是太多，大部分还是结结实实的圆锥。所以，赶快抓紧时间享用吧！这次它们大部分是在悬崖底部的一些树上停着啄食，这使我有机会偷偷跑到崖边好好欣赏一番，而这次我也得以真正看清楚它们的颜色：它们身着天鹅绒绿的制服，佩带猩红色和黄色的肩章，头戴黑色的帽盔。它们喧喧嚷嚷地从一棵松树飞到另一棵松树，但总是保持着某个队形，而且每个队的队员数目都是偶数。只有一次我发现它们是5个一群组队的。

我不知道那些成双成对一起筑巢的鹦鹉是不是和那些9月份吵吵闹闹欢迎我的鹦鹉一样喧闹。但是我确信，如果你在9月份的山上看到鹦鹉，你很快会知道答案。同时，作为一个鸟类学者，我有义务将我听到的鹦鹉叫声描绘给大家。乍听起来，那声音像蓝头松鸦的叫声，但是仔细一听你会发现，蓝头松鸦的叫声很柔软，就像悬浮在它们家乡的峡谷上空的薄雾一般，带着一种悠远的乡恋气息。而这种被当地人称为“瓜卡马亚”的鹦鹉们，叫声要更高亢嘹亮一些，比较充满激情。

有人告诉我，春天的时候，一对对雌雄鹦鹉会在一些高大的枯松的树干上寻找啄木鸟啄出的洞，然后在那里栖息，在暂时与世隔绝的环境中履行繁衍后代的任务。但是我怀疑什么样的啄木鸟才能啄出那么大的洞？要知道瓜卡马亚几乎和鸽子一般大，几乎无法塞进鸽子房。难道它们是用自己坚硬的喙，在啄木鸟啄出的基础上将洞扩大吗？或者说它们专门寻找帝啄木啄出的大洞？因为据说有人在森林中发现过帝啄木。我很乐意把这项愉快的研究任务留给将来拜访那些鹦鹉的鸟类学家。

绿色环礁湖

对于曾经游历过的野地来说，明智的人从来不会再度拜访。因为百合花开得愈漂亮，就愈说明有人工培育和雕琢的痕迹。故地重游不但会白白浪费一次旅行，而且会破坏印象中的美好和神秘。因为只有在记忆中，野地游历的惊险和刺激才能永不褪色。正因为如此，自从 1922 年我和我的弟弟一同乘独木舟去科罗拉多三角洲探险，我们就再也没有重温故地。

我们想告诉大家的是，自 1540 年赫南多·德·阿拉康首次发现科罗拉多三角洲以后，这片土地就逐渐成为一片被遗忘的角落。那年，我们兄弟两人在河流入海口处安营扎寨，但接连几个星期我们见不到一个人、一头牛甚至连斧凿的痕迹、藩篱的影子都看不到。但是之前我们曾听说赫南多·德·阿拉康把他的船只都停泊在了那个入海口。有一次我们偶然发现了一辆马车碾过的痕迹。是谁驾的马车无迹可考，但是其目的肯定是邪恶的。还有一次我们发现了一个废弃的锡罐，我们把它当作珍稀的容器彼此不相让。

我们营帐上方的豆科灌木丛中，栖息着黑腹翎鹌鹑，每天清晨担负着黎明报晓的任务。当太阳从马德雷山缓缓升起时，阳光斜洒在绵延 100 英里的美丽的荒野上——一片被参差不齐的山峰包围着的巨大的低洼平地。在地图上，科罗拉多三角洲被河流分成两部分，当你身临其境的时候，你有时会感觉不到河流的存在，有时又会感觉河流无所不在。因为河流连接着成百的绿色环礁湖，连它自己都无法决定哪一个环礁湖能让它愉快而又可以不慌不忙地流向海湾。于是它干脆每个环礁湖都尝试一遍，而我们也顺着河流把所有的环礁湖都逛了一遍。它时而分流，时而汇合；时而弯曲，时而回转。它在郁郁葱葱的灌木丛里蜿蜒，就只差没有兜圈子。它和迷人的小树林嬉戏，即使迷路了，也自得其乐。而我们似乎是受了它的感染， 也乐在其中。河流的这种拖沓不前使我们饱尝了旅游的乐趣，因此我想告诉大家：如果想旅游的话，就和一条磨磨蹭蹭不愿奔向大海丧失自由的河流一起旅游吧。

在我们乘着独木舟漫游那些绿色环礁湖之前，对我而言，“他领我在安静的水边漫步”仅仅是《圣经》中的句子。如果大卫没有写下那么优美的诗篇，我想我们肯定会抑制不住自己创作来歌唱美好事物的冲动。静静的河水呈现出深沉的祖母绿，我想可能是绿色的海藻使然，但是也许没有海藻也是那么的绿。河边的豆科灌木就像一面浅绿色的墙，再加上柳树，便形成了一道天然的屏障，把河流与荆棘遍布的沙漠区隔开来。在每个河流的转弯处，我们几乎都能看到一只白鹭立在前方的池塘中，每一只白鹭就像一尊白色的雕像，与水中白色的倒影形成绝配。一群群鸬鹚伸着黑色的脑袋，追寻着不时掠过水面的胭脂鱼；反嘴长脚鹅、白羽鹮和黄脚鹮单脚立在沙洲上打盹；绿头鸭、赤颈鸭和短颈野鸭感觉到我们的动静，慌乱地飞到空中。待飞稳后便聚成一

小群，或者去鸭巢休息，或者折飞到我们身后，看我们究竟要做什么。如果有一群白鹭在远处的柳树上休息，那么从远处望去，就像一场太早到来的暴风雪。

这些形形色色的飞禽和鱼类并非归我们独享的财富。因为我们经常会遇到美洲野猫，它们贴伏在一些漂浮的原木上，时刻准备着捕捉胭脂鱼。浣熊会全家出动，在浅水区趟涉，大口咀嚼水中的甲虫。郊狼从岛上的小圆丘背后偷偷窥视着我们，想等我们离去以后，继续出来吃它们的早餐，主要是大豆，偶尔也吃岸上跛足的鸟、鸭子和鹌鹑。另外，每一处浅滩上都有黑尾鹿的足迹。我们经常会仔细察看这些足迹，希望能找到三角洲的暴君 —— 美洲豹的蛛丝马迹。

我们既找不到美洲豹的洞穴，也找不到它的毛发，但是整个荒野都可以感受到它的存在。没有任何一种动物敢忘记它的存在，因为忘记的代价将意味着死亡。每一只鹿在越过灌木之前或是停下来吃牧豆树下的豆荚时，都会事先敏感地嗅一嗅，看看有没有美洲豹的气息。对于那些点着篝火野外宿营的人们来说，美洲豹也是他们最常聊的话题。夜晚时，没有一只狗能蜷缩着安然入眠，除非它的主人就在旁边。因为它们知道美洲豹也是黑暗中荒原的统治者，其巨大的脚掌可以撂倒一头牛，其锋利的牙齿可以啃断骨头。

但是现在，科罗拉多三角洲很可能已被改造成牛羊们的天堂。从此，爱刺激的探险者们不再向往那片曾经神秘而如今乏味的土地。免于恐惧的自由时代来临了，绿色环礁湖的光辉时代也就结束了。

当吉卜林闻到阿姆利萨城晚餐的烟味时，他真应该为此写一首诗。因为没有一个诗人曾经赞美或体验过这片绿色大地木材散发的烟的味道。可能大多数的诗人都靠无烟煤过活。

在科罗拉多三角洲，人们只烧牧豆树，因为那是最芳香的燃料。这些古老的树木历经上百次霜雪和洪水的侵袭，又历经上千年太阳的烘烤，变得又硬又脆，而且不易腐烂。现在这样的燃料在每一个营地周围都随处可见。它们时刻准备着在薄暮中斜斜升起一缕缕蓝烟，指挥一曲茶壶之歌，或者是烘烤一片面包、把一锅鹌鹑肉烤成棕色，温暖人和动物的躯体。如果你在荷兰烤锅下面放了一铲牧豆树木炭，千万记住临睡前也不要坐在烤锅的附近，否则烤锅的余温足以把你烫得跳脚。就像“百足之虫，死而不僵”，牧豆树木炭据说可是有七条命呀！

我们曾在玉米地里用白橡木烹煮食物，曾在北部的森林里用松木烧火取暖，也曾在亚利桑那州用杜松烘烤鹿排，但是直到我们用科罗拉多三角洲的牧豆树木炭烤了一只嫩雁，我们才算找到了最完美的燃料。

这些雁应该被烤成最美的棕色，因为我们整整用了一个星期才捕到它们。每天早晨，我们看到它们排成方阵，呱呱叫着从加州湾向内陆飞去，不久之后又看见它们腆着大肚子静悄悄地飞回来。真不知道是哪个绿色环礁湖的哪种珍稀美味吸引着它们。一次又一次的，我们跟着雁群挪动我们宿营的地点，希望能找到它们的栖息地和它们

的觅食地。终于在一天早晨的 8 点左右，我们看到雁群的方阵绕着圈飞行，继而分成一排排侧滑而下，就像枫叶向地上滑落一样。经过这么长的时间，我们终于找到了它们的聚居地。

第二天早晨大约同一个时辰，我们埋伏在一个看似平常的泥沼旁等待雁群的出现。泥沼的沙洲上布满了昨日雁群留下的足迹。我们早已经饥肠辘辘了，因为从我们的宿营地跟到它们的栖息地，要走很长一段路。我弟弟实在按捺不住饥饿，准备吃一只已经冰凉的烤鹌鹑。但是烤鹌鹑还没入口，空中便传来一阵呱呱的叫声，我俩霎时间惊呆了，立在那儿一动不动。烤鹌鹑悬在弟弟嘴边，一时没有反应过来的两兄弟痴痴地看着雁群悠闲地在空中盘旋，呱呱争吵着，犹豫着，最后还是落在了沼泽地上。这时，枪响了，烤鹌鹑掉落在地上。“失之东隅，收之桑榆”，被我俩打中的雁掉在沙洲上，痛苦地用腿挣扎着，它们即将成为我们的美餐。

越来越多的雁飞过来了，开始在沼泽地上觅食。猎狗躺在我们身边，颤抖着身子。我们则躲在遮蔽物背后，悠闲自得地吃着烤鹌鹑，边吃边听雁群呱呱地交谈。那些雁在狼吞虎咽着一种沙砾。一群吃饱离开以后，另一群又接上来，兴奋地吃着它们可口的沙砾。在绿色环礁湖成千上万的卵石和沙砾中，唯有这里的沙砾最合它们的胃口。为了这种与众不同的美味，雁群不惜飞上 40 英里的距离。而能最终找到雁群觅食的场所，我们长途跋涉也是值得的。

在科罗拉多三角洲，有多得数不清的小猎物。在我们住宿的每一个营地，短短几分钟，我们就能猎到足够多的鹌鹑供明日食用。如果你是一个讲究烹饪的人，那么至少需要一个霜冻的夜晚，以便于将猎到的鹌鹑挂在牧豆树上冷冻，然后再用牧豆树木炭烘烤，那样味道会极其鲜美。

而且，科罗拉多三角洲所有的猎物都难以置信的肥腴。每一只鹿都有着厚厚的油脂层。如果它愿意的话，我们可以将一小桶水倒进它背部的凹处。当然，它不会愿意。

要找出科罗拉多三角洲富庶的原因其实并不难。每一株牧豆树和具毛牧豆树都结着沉甸甸的果实。干涸的泥沼平地常年覆盖着一种青草，这种青草的种子就像稻谷的种子，可以很轻松地就搜集一大杯。另外，那里还有成片成片类似咖啡草的豆荚，如果你从中穿过，你的口袋会装满脱了壳的豆子。

我记得有一片野南瓜地，足足覆盖了几亩的泥滩。鹿和浣熊嚼开了冰冻的瓜果，将种子暴露在外。鸽子和鹌鹑在这片丰盛的筵席上空舞动着觅食，那情形就像一只只熟透的香蕉上的果蝇。

我们当然不能也不想吃鹌鹑和鹿吃的东西，但是我们明显地能被它们欢快的心情所感染。它们在那片“流淌着奶和蜜”的肥沃野地上享受着大餐，我们不自觉地也沾染了过节似的喜气。我们都尽兴地享受这共有的丰饶和彼此的幸福。我不记得我曾在任何一个已开拓过的地方能感受到类似的气氛。

但是，在科罗拉多三角洲宿营并不全意味着吃喝玩乐。我们的问题在于缺水，环

礁湖的水太咸，而我们所能找到的河流的水又太浑，都无法入口。我们每在一处宿营，都要打一口新井。然而大部分的井所能提供的也是从加州湾辗转而来的海水。后来，经过长期艰苦的摸索，我们学会了在哪儿打井才能喝到清冽的泉水。也就是说，每当我们对水的品质犹豫不定时，我们就会拽着猎狗的后腿把它放到井水旁，如果它摆出拒喝的架势，我们就要继续前行，继续寻找。但如果它能大口豪饮，就意味着我们可以让独木舟靠岸，生火做饭，并搭帐篷过夜。这时，我们总算可以坐下来，与周围静谧的世界融为一体。同时还可以看着鹌鹑在荷兰烤锅中滋滋作响，看着落日的余晖消失在圣培德罗·马帝尔山后面。等吃完晚餐，洗完碗碟，我们就在一起回忆白天的经历，之后听着夜晚野地上的各种声音入眠。

我们从来不为明天订立计划。因为经验告诉我们，在野地上不时有一些全新的景色和不可抗拒的诱惑出现。它们足以在早餐前颠覆全天的计划。就像河流一样，我们喜欢逍遥自在、无拘无束地漫游。

此外，在科罗拉多三角洲按照计划旅行并不是件轻松的事情。每当我们爬到一棵棉白杨树上眺望远方时，我们就会对此有深刻的感受。视野的开阔反衬了我们的渺小和无力，使我们打消了延长旅程、慢慢体会的念头。尤其是向西北方望去的时候，马德雷山山脚下的一条白色斑纹悬浮在永恒的海市蜃楼之中。就是在那片含盐度高的沙漠，1829 年的时候，亚历山大·帕第因为饥渴、劳累和蚊虫的叮咬而丧失了生命。帕第原本有个计划：横穿科罗拉多三角洲前往加州。

有一次我们计划水陆并用，从一个绿色环礁湖去下一个更绿的环礁湖。我们知道更绿的环礁湖必然是有很多的水禽在湖面盘旋。从地图上可以看出，如果穿过丛林般的箭木阔苞菊，两个环礁湖的距离大概是 300 码。箭木阔苞菊是一种高高的长矛状的灌木，长得密密麻麻。但是在急流的冲刷下，箭木阔苞菊也不得不低下高贵的头颅。它们就像马其顿的步兵方阵那样挡住了我们的去路。在这种情况下，我们只能小心翼翼地撤退。同时不得不说服自己，不管怎样，还是以前的那个环礁湖好。

被困在箭木阔苞菊的方阵中，如同进入一个危险的迷宫，但其危险却没有人提及，而别人所提及的要求我们防备的危险却又没有发生。有人告诉我们，当我们把独

木舟往河岸上靠的时候，我们会面临猝不及防的死亡危险。他们说，有比我们的独木舟更大更坚硬的船只被潮涌霎时间吞没。所谓潮涌，就是某种即将到来的潮汐涌动加州湾的海水形成的一面水墙。因此，我们不敢大意，仔细研究了潮涌的情形，并制订了周密的逃避潮涌的方案。可能是由于太紧张的缘故，我们甚至在睡觉时都会梦到潮涌，梦到海豚骑在潮涌的顶端、一群受了惊吓的海鸥匆忙从风口浪尖逃亡。但是，当我们到达河流的入海口时，我们把独木舟高高挂在一棵树上，连续等了两天，都没碰到潮涌。我们甚至都有点失望。

科罗拉多三角洲没有具体的地名，我们只能边行进边给它们起名字。有一个环礁湖我们称之为瑞利多，因为我们在当地的天空看到了珍珠样的东西。当时我们正平躺在草地上，惬意地呼吸着 11 月份清凉爽心的空气，悠闲地盯着一只美国兀鹰在高空翱翔。这时，远方的天际突然出现了一圈不停旋转的珍珠般的亮点，忽隐忽现。但很快，一声微弱的叫声告诉我们：那是一群鹤。它们发现了这片美丽的三角洲。当时我的鸟类学知识全是自学得来的，尽管它们真实的名字是沙丘鹤，但我还是喜欢称它们为美洲鸣鹤，因为它们是那么的雪白。不过，到底叫什么名字并不重要，重要的是我们正在与飞禽当中历史最为久远的鹤一起分享我们所处的野地。我们和鹤群在远离现代社会的地方发现了一个共同的家。家的美丽和原始使我们像回到了更新世。但如果我们真的能回到更新世，我想我们应该可以听得懂它们在说什么，也能回应它们的叫声和问候。但是，经过漫长的岁月嬗变，现在我们再看起来，只能说它们是在静悄悄地飞行。即便在鸣叫，也无法听懂它们在叫些什么。

不过，上面所有的事情都过去好久了。有人告诉我说环礁湖现在出产罗马甜瓜。果真如此的话，我想这些甜瓜应该不乏风味。

人们总是会在不经意间扼杀自己所喜欢的事物。像我们兄弟两人这样的探险者和拓荒者也不例外。探险野地意味着毁灭野地。也许会有人说，我们不得不那样去做。但不管怎样，我庆幸年轻的时候曾经去野地游历过。试想，如果一张地图上没有一个空白点，即便享有 40 种自由又有什么用呢？

加弗兰之歌

河流之歌通常是指河水拍打岩石、拂动树根、冲击险滩时发出的声音和曲调。

加弗兰河就会唱歌，那是一首欢快的歌曲，描述着会跳舞的涟漪和藏在悬铃木、橡树和松树布满苔藓的根部下面的肥腴红鳟鱼的快乐。那还是一首有用的歌曲，因为淙淙的河水声充斥狭窄的河谷，掩盖了人的脚步声或马蹄声，使下山前来饮水的鹿和火鸡完全丧失警惕。如果你在下一个河流拐弯处眼疾手快的话，很可能会打到一只猎物，从而免去你气喘吁吁的爬山之苦。

河流的歌声，每只耳朵都可以听得到。但是，那些大山中还有一种音乐和声音，

并非所有的耳朵都能听得到。哪怕你想听懂那首音乐中的几个音符，也需要先在那里住上很长一段时间才可以，而且你还必须听得懂大山和河流的语言。之后选一个寂静的夜晚，当篝火渐渐熄灭、金牛星座升上夜空的时候，静静地坐着听狼号的声音，然后努力回忆你所见过的所有事物并试图去理解它们。这时你才有可能听到那种音乐——一种巨大而和谐的脉冲——它的音符雕刻在成千上万座山脉上，标示着动植物的生死存亡。它的音律短则几秒，长则成千上万年。

每条河流都唱着属于自己的歌。但是大多数河流的歌曲早就因人类的不当作为而受到破坏了。过度放牧导致植物的死亡和水土的流失；猎枪、陷阱和毒药造成更大范围鸟类和哺乳动物的灭绝。取而代之的是道路的修建、公园和人工森林的出现和游人的增多。修建道路、公园和人工森林，本来是想要更多的人能听到大自然的音乐，但事与愿违，当人们准备倾听时，听到的除了噪音还是噪音。

在漫长的历史过程中，曾经有一群人可以在河流旁定居生存，同时不破坏大自然的和谐和美丽。加弗兰河旁肯定居住过成千上万这样的农人，因为随处还可见到他们耕作的痕迹。登上任何一座架设在峡谷上的吊桥，你都可以发现自己置身于小小的岩石阶丘或拦水的大坝旁。而且每一个阶丘和大坝的顶部与下一个阶丘和大坝的底部齐平。在每一个大坝后面是一小片耕地或果园，靠着毗邻的陡峭山峰流下的雨水进行地下灌溉。在山脊的顶部，你也许会发现瞭望塔的基座。以前农夫们可能是用它们来护卫他的农田。另外，农夫们的家庭用水是从河里挑的，他们也没有养什么家禽。至于他们耕作的是什么庄稼、他们大概居住于多少年以前，只能从树龄长达300年的松树、橡树或刺柏在他们以前遗留的小农田里的根茎寻找零零碎碎的答案。很明显，他们居住的时间肯定比最老的树龄还要久远。

鹿喜欢躺在那些小阶丘上，因为小阶丘可以给它们提供平坦的床铺，没有疙瘩的岩石，同时还铺着松软的橡树树叶，周围还有灌木丛做帏帐。当猎人发现鹿，还没来得及翻越水坝，鹿早就逃得无影无踪了。

有一天，藉着一阵呼啸的风，我悄悄匍匐着接近一只睡在大坝上的鹿，它躺在一棵大橡树的树阴下。那颗橡树的根茎牢牢固定着那座水坝的基石。鹿角和鹿耳在旁边一种金黄色格兰马草的映衬下，轮廓格外清晰。格兰马草中间还生长着一种绿色的玫瑰花形状的龙舌兰。整幅景色就像精心修饰过一样，和谐而优美。也许是太沉醉的缘故，我射过了头，箭把古老的印第安人铺设的岩石击碎了，鹿却逃跑了。当那只鹿跃到山下，挥动着雪白的尾巴回头向我“道别”时，我忽然觉得我和它就像一则寓言里的主角。尽管路归路、桥归桥、尘土归尘土、石器时代归石器时代，但大自然中相互追逐与竞争的规律却是永恒的。我没有射中鹿是符合情理的，因为如果我现在的菜园能长出一棵橡树，我也希望会有一只鹿躺卧在它的落叶上安眠。我也希望会有一个猎人悄悄走近，想射鹿却没有射中，然后再在那里想：是谁建了菜园的这道围墙？

但是总有一天，我的鹿会被某人的猎枪射中它那平滑的肋骨部位。一头笨拙的公

牛也许会占用鹿的那张位于橡树底下的床，还会把金黄色的格兰马草吃得精光，直到杂草遍地、胃口变坏为止。然后，一场洪水会毁掉古老的水坝，冲散的岩石会堵塞河流下游游客的观光道路。水土流失造成土壤的沙化，每当卡车经过便尘土飞扬。而那条道路曾经是狼群漫步的地方。

表面上看来，加弗兰河地区是一片坚硬多石的山区，悬崖绝壁，险峻异常。那里的树有太多的树瘤，不适合作为柱木或制材原木。那里的山脊太陡峭，不适合放牧。但是加弗兰河古老的拓荒者眼光敏锐，他们凭直觉和经验断定，这是一片处处“流淌着奶和蜜”的宝地。这些看起来歪歪扭扭的橡树和刺柏每年都硕果累累，足够养活那些野生动物。而鹿、火鸡、野猪等等就像上面提到的那只笨拙的公牛，胃口好得很，没有白费大自然的恩赐，个个长得骠肥体壮。那些金黄色的格兰马草在风的拂动下摆动枝叶，露出底部密密麻麻的球茎和球根作物，同时还有野马铃薯。割开一只胖嘟嘟的小鹌鹑的嗉囊，你恍若发现了一个地下食物的标本室，它们都是从你原本认为是贫瘠的布满岩石的土壤中发掘出来的。

每个地区都会有一种可以象征当地物产富饶的特色食品。加弗兰河地区有这样一种典型的美食法：杀死一只被树的果实养肥的雄鹿，时间不要早于 11 月份但也不要迟于 1 月份。把它挂在一棵橡树上，历经 7 个夜晚的霜冻和 7 个白天的日晒，然后从雄鹿腰部的油脂团中切下半冻结的肉块，再将肉块横切成肉片，在每片肉上撒一些盐、胡椒粉和面粉，之后将其丢进荷兰烤锅里。荷兰烤锅应事先用白橡木炭烧烤，里面放的熊油要热得冒烟才行。肉片一变成棕色就要捞起。然后，丢一些面粉到油里，再倒一些冰水和牛奶。最后，将一片肉片放在一个冒着热气的发酵面包上，并且浇上浓汁。

这道美味还有一种象征性的意义，仿佛是一只鹿躺在养育它的山上，金黄色的浓汁就像直到它死前仍充盈在它生命中的阳光。

食物，是加弗兰河之歌中永恒的音符。当然我的意思不仅仅包括人类的食物，也包括橡树的食物，而橡树又喂养了雄鹿，雄鹿喂养了美洲豹，美洲豹死后的尸体又风化分解成橡树的养料，而橡树的果实又喂养了美洲豹的猎物。至此，由橡树开始，又到橡树结束，完成了一次食物链循环。但这仅仅是众多食物链循环中的一条。因为橡树还可以喂养松鸦，松鸦再喂养苍鹰。此外，橡树也喂养了提供油脂供你烹制肉汁的熊、教会你很多植物学知识的鹌鹑和经常躲过你的猎枪的火鸡。而众多形态各异的食物链循环都有一个共同的目的：帮助加弗兰河的河流从广阔的马德雷山再多辟出一片土壤，好再造就一棵橡树。

有一些人的职责是研究植物、动物和土壤的构成，它们就像巨大交响乐团的乐器，而研究这些“乐器”的人被称为教授。他们从这些“乐器”中挑选一种作为研究对象，然后便把毕生的精力投入其中，将其分解开来，描述它的“弦”和“共鸣板”。而这种分解的过程我们称之为研究。进行研究的地方我们称之为大学。

一位教授可以拨动自己乐器上的弦，却不能拨动别人乐器上的弦。如果他倾听别

人弹出的音乐，他也不会向他的同事或学生承认这一点。因为所有的教授都受制于一种僵硬、不能变通的禁忌，那就是“术业有专攻”，要做到泾渭分明。研究乐器的构造属于科学的范畴，而探索音律的和谐则是诗人们的事情。

教授以探索科学为志向，科学以推动社会进步为宗旨。但是由于人们过于急功近利，过于迫切地将社会进步推广到贫穷落后的地区，很多复杂精致的“乐器”便在追求进步的过程中被践踏和破坏，直至偌大的“交响乐团”变得支离破碎，再也无法演奏优美的乐曲。但是教授们不理会这些，只要能赶在“乐团”崩溃前将每种乐器分门别类进行研究，他们就心满意足了。

科学不但给世界创造了物质财富，也创造了精神和道德财富。而最可贵的精神和道德财富便是客观性观点和科学性视野的创立和提倡。也即意味着怀疑除事实以外的所有事物，并且毫不留情地斩断非事实的成分，任由其自生自灭。通过这样的手段而获知的一种科学事实是：每条河流都需要很多的人来开发，所有的人都需要更多的发明来便利自己的生活，因此更进步、更广泛的科学便成为理所当然的要求。而美好生活的缔造，正是基于上述逻辑链条的无限扩展上。但是，科学却忽略了这样的事实：依傍河流的美好生活，同时有赖于对河流自身规律和“音乐”的感知和维护。

也许科学尚未降临加弗兰河，所以水獭仍旧可以在池塘中悠闲地摆动尾巴，与躲在布满苔藓的水草下面的虹鳟鱼追逐“嬉戏”，在平静的湖面上荡起一层层涟漪。它们不会想到，有一天洪水会冲决池塘的堤坝，将其卷入太平洋；它们也不会想到，有一天钓鱼者会和它们争夺对虹鳟鱼的享有权。就像科学家们一样，他们从来没有怀疑过自己对于美好生活的设计和追求。他们一直认为，加弗兰河会为他们永远歌唱下去。

俄勒冈州和犹他州

旱雀麦当家

就像小偷之间也有道义一样，生物界的害虫之间也有团结与协作。当一种害虫遇到自然屏障无法发挥威力时，另一种害虫便会继之而来，用新的方式来攻克那座自然屏障。到了最后，每个地区、每个物种都有了不请自来的“生态客人”的配额。

因此，当马匹的数量逐渐萎缩时，英国麻雀便不再被视作害虫。随着拖拉机的普及，燕八歌取代了英国麻雀的害虫地位。当栗疫病无法在栗树西界之处横行肆虐时，荷兰榆树病便成为“后起之秀”，蔓延到栗树西界之处的几乎每个角落。当白松疱状锈病被广袤的平原阻隔了西去的道路，因无树木的凭借而丧失滋生的温床时，这种树的痼疾便折返到平原的大后方，开辟出一条新的登陆途径。现在，它正沿着洛矶山脉，迅速地从爱达荷州蔓延开去。

那些不请自来的“生态客人”一般是随着最早的拓荒者而移居某地的。瑞典植物学家彼得·卡姆发现，早在1750年，欧州大部分的杂草就已开始在新泽西州和纽约州生根发芽了。之后，这些杂草便随着拓荒者的锄头迅速滋生。往往是一片新的耕地刚刚成形，杂草地也初具规模了。

还有一些“生态客人”是稍后才到的。它们从西部发迹而来，发现了这片被牲畜的铁蹄践踏出来的几千平方公里现成的苗床，就像久旱逢甘霖的花草一样，其生命力之旺盛令人难以想像。当你在一个晴朗的春日清晨醒来，也许你就会发现一种全新的杂草占据了你的主视线。一个很显著的例子就是，旱雀麦草便是几乎在一夜之间入侵了山腰和西北各山麓小丘。

但是，请不要对旱雀麦草的到来过于乐观。在这个“大熔炉”的诸种成分中，旱雀麦草并不属于那种可以自成一片生气盎然草地的物种。和看麦娘、马唐一样，旱雀麦草是一年生的草本植物。每年秋天凋零，次年春天或当年秋天自播繁殖。在欧洲，它繁殖的温床是茅草屋顶腐败的草。“屋顶”的拉丁文是“tectum”，所以旱雀麦草的学名是“Bromus tectorum”，意思便是“屋顶的旱雀麦草”，即一种可以在屋顶生存，也可以在这片肥沃而干燥的陆地茁壮成长的草本植物。

今日，西北山麓侧翼的山丘呈现出赏心悦目的蜜色。但是这种蜜色不是源自于曾经覆盖过它们的用途广泛、养分充足的丛生禾草或冰草，而是源自于旱雀麦这种低劣杂草。旱雀麦尽管不是这片山丘的“土著居民”，却以其旺盛的生命力成为这片土地的“殖民者”。当汽车驾驶者的目光随着山的流畅轮廓线逐步延伸扩张至最高的峰顶时，他们会惊叹于山的美轮美奂，但却不会注意到草的替换。他们不会想到，大山也有自己的化妆师，它们会用生态化妆粉，遮盖自己遭人类破坏的容颜。

原来，导致旱雀麦取代土生土长的牧草成为那片土地主宰的根本原因是过度放牧。当过于庞大的牛群和羊群啃掉和踩掉山麓丘陵的草皮时，就需要某种东西来暂时覆盖一下因水土流失而变得光秃秃的土地。在这种情况下，旱雀麦便应运而生了。

旱雀麦是“群居植物”，长成后是一簇簇茂密的草丛，而且每一株的茎上都长着一团芒刺，家畜根本无法食用。如果你想体会一头牛想吃成熟的旱雀麦而苦于无从下口的窘境，那么不妨试着穿短筒的鞋子从旱雀麦草丛走过。那种痛苦是不言而喻的。因此，所有在长有旱雀麦的田野劳作的农夫都要穿长筒靴。只有你开着汽车或行走在混凝土人行道上时，尼龙袜才派得上用场。

旱雀麦的芒刺极易燃烧。因此，秋日的山麓就像披盖了一条像棉絮一样易燃的黄色毛毯。要想使长有旱雀麦的田野彻底避免火灾几乎是不可能的。因此，山坡低处的那些适合家畜食用的植物，例如蒿和苦树，都被烧光了。只有山坡的高处还残留了一些，但因为海拔较高而使用效能骤减。因为冬天时家畜不会爬那么高去啃食它们。同样的，那些作为鹿和鸟冬日遮蔽的所有低处的松树林也被烧除了，只剩下高处零零星星的几处松树“独傲寒江雪”。

对于夏日的游客而言，烧掉几处山麓丘陵的灌木，似乎只是一个小小的损失。他们并不知道冬天的大雪大大缩减了家畜和野生动物的活动范围。它们无法到山的高处觅食。当然，家畜可以在山谷的牧场上找到食物，但是鹿和赤鹿如果无法在山麓丘陵找到食物，它们就只能饿死。可以过冬的地带是很有限的。而且越往北走，可以过冬的牧场区与夏日牧场区之间的大小差别就越大。现在，山麓丘陵上那些零散的苦树丛、蒿和橡树丛正在旱雀麦引发的火灾猛攻下快速缩减，而这些植物恰是整个地区的野生动物能否存活的关键。另外，这些零散的灌木丛凭借其天然屏障作用，还是当地残存的多年生草本植物的庇护所。一旦它们被大火烧除，那些残存的草本植物便一览无遗地暴露在家畜和野生动物贪婪的目光之下。当猎人们和畜牧业者们为谁应该首先采取行动以减轻冬日牧场的负担而争吵得不可开交时，旱雀麦草正在乘虚而入，伺机扩大地盘，留下越来越狭窄的冬日牧场供那些愚蠢的人们争吵。

旱雀麦给这片土地带来了很多困扰。也许这些困扰没有比饿死鹿或扎坏牛的嘴更重要，但仍旧值得一提。旱雀麦入侵了古老的紫苜蓿田，使饲草的品质大为降低。它们还阻碍了刚孵化的小鸭从高处的窝巢到达低处的湖水。对于小鸭而言，这趟旅行是生死攸关的。此外，它们侵入了林木区低矮的领地，使幼嫩的松树苗窒息夭折，也使粗壮的老松木面临火烧灭种的威胁。

我自己也曾亲身经历过旱雀麦带来的困扰，那是在我抵达北加州边界的一个“进口港”时。一个检察官员在检查我的汽车和行李，他很礼貌地解释说加州欢迎观光客，但是观光客的行李不能带有植物或动物疫害。我问他哪些动植物在违禁之列，他机械性地给我列举了一长串侵扰果园和菜园的害虫名字，但是却没有提到旱雀麦。我感到很困惑，旱雀麦已经从这位检疫官的脚下向各个方向的山丘蔓延着、危害着，动植物检疫部门却仍旧浑然不觉。

但是，就像鲤鱼、燕八哥和硷蓬的情形一样，受害于旱雀麦的地区逆来顺受，甚至以苦为乐，化有害为无害，发现了旱雀麦并非一无是处。原来，旱雀麦的嫩芽在未变老之前是一种好饲草。你午餐吃的牛排，多半就是由春天放牧造成的结果，但是旱雀麦反过来遏阻了过度放牧，从而减缓了过度放牧可能造成的土壤侵蚀。（这种生态链条上的“大风吹游戏”很值得我们费心思考。）

我仔细地观察思索，想知道西部是否已经接受旱雀麦，把它当成一种不可避免的劫难；想知道它是否已准备和旱雀麦共存，直至世界末日；想知道它是否已把旱雀麦视作挑战和警钟，以纠正过往对于土地的滥用和不当使用。但是我发现，几乎每个人都抱着绝望的态度。到目前为止，人们在培育饲养野生动植物时毫无自豪感和责任感，在面临环境破坏、水土流失时也毫无羞耻感和使命感。我们在会议厅或编辑室里，为了自然资源的保护闭门造车，与假想敌作斗争。但却不曾亲临偏远的未耕种的土地，实实在在地去与破坏生态平衡的行为作斗争。

曼尼托巴省

克兰布依

我一直担心，教育会沦为“一叶障目，不见泰山”或“只见树木，不见森林”的片面的认知工具。

我们大多数人都视而不见的一样东西就是沼泽的特质。我意识到这一点，是在我殷勤地带一个访客到克兰布依游览时。我发现对他而言，克兰布依只是比其他沼泽看起来更荒凉、船只航行起来更不顺畅的一个“鬼地方”而已。

我觉得这是很奇怪的现象。因为所有的鹈鹕、游隼、膛鹬和西[illegible]都知道克兰布依是个与众不同的沼泽。不然它们为什么舍弃其他的沼泽，唯独钟情于此处？不然它们为什么憎恶我闯入它们的势力范围，将之视为破坏宇宙秩序的不当行为，而非简单的非法侵入？

我想其实原因很简单。无论是从空间上还是时间上来讲，克兰布依都是一个与众不同的沼泽。只有那些毫无批判眼光和探索精神的人才会道听途说地相信所有的沼泽地都是一样的。而鸟类更清楚克兰布依的独特。一群往南飞的鹈鹕只要感觉到大草原的微风在克兰布依上空吹动，就能立刻嗅出这片沼泽地的独特，意识到这儿是地质史上辉煌的一个角落，是逃避最冷酷无情的侵略者——未来的一个绝好的避难所。于是，鹈鹕张稳翅膀，伴随着奇怪的咕噜声，优雅地朝着热情好客的荒野盘旋而降。可惜的是，这片荒野只属于过去。

在鹈鹕到达之前，克兰布依已经接纳了其他一些避难者。每一种避难者都以自己的方式试图使时间停滞。加拿大燕鸥就像一群快乐的孩子，在淤泥滩上尖叫。因为初春冰河融化的雪水让它们即将捕食的猎物——[illegible]鱼的脊背打着寒颤。一群沙丘鹤尖厉地鸣叫着，向着一切它们感到恐惧和不信任的事物发出挑战。一支天鹅舰队安静而威严地航行在港湾上，那神态就像哀悼某种像它们一样高贵的事物的消逝。饱受暴风雪凌虐的北美白杨树的边缘是沼泽汇入一个巨大的湖泊的入口。在那里，一只游隼正在戏弄一只飞鸟。实际上游隼的肚子里已经塞满了鸭肉，它只是想从那只飞鸟慌乱的神情和惊吓的叫声中寻求快感和满足。在阿加西兹湖覆盖着这片平原的时期，这也是游隼们茶余饭后的消遣之一。可惜的是，这种消遣也只属于过去。

如果要对上述提及的野生动物的神态进行分类，其实是件非常容易的事情。因为几乎每个物种都在赤裸裸地表达自己的心思意念。但唯独一个物种例外，你根本无法猜透它的心思。因为它拒绝与“人类侵略者”有任何的接触和往来。其他的鸟儿可以轻易地信任穿着制服的高傲的人类，但西[illegible]绝不会这样！不管我有多么的小心翼翼，

不管我展示的态度有多么友好，但当我靠近沼泽边缘的芦苇荡，我所能看到的只是一道转瞬即逝的银光。它们飞入湖中，无声地驶向湖心。待到达对岸的芦苇荡后，它们会发出一阵轻微但清脆的声响。似乎是在警告它的同类一些什么。但究竟是警告些什么呢？

我无法猜出答案，因为在这种鸟和全人类之间存在着某种无法逾越的障碍。我的一位朋友在他的鸟生物名单中找到“鹪鹩”，然后在旁边草草用谐音记录了鹪鹩的叫声——‘克力克、克力克’和其他一些毫无实质意义的东西，之后便不再予以理会。这位朋友并没有意识到，鸟叫的背后实际蕴含着丰富的信息。我们应该做的不是模拟性地记下那声音，而是尽可能地诠释它、理解它。但在诠释和理解那声音方面，我和那位朋友一样，深感无能为力。

随着春日的临近，那轻微而清脆的叫声更是持久不歇。无论是在黎明还是黄昏，每一处解冻的水域都回荡着这种叫声。我猜想这种时候，幼小的鹪鹩应该学着开始了它们的水上生涯，并且开始聆听父母传授的“鹪鹩生存哲学”。但是要实景观摩这种“课堂教育”，并非易事。

有一天，我匍匐着，躲蔽在巨稻鼠窝的一堆污物中，我特意穿了一件与周遭颜色相近的衣服以形成保护色，然后便沉醉在沼泽地这本大百科全书中。我看到一只母美洲潜鸭护送着一群小鸭漫游而过。小鸭的嘴是粉红色的，柔软的毛则是泛着绿的金黄色。一只弗吉尼亚秧鸡大摇大摆地经过，尾巴几乎要触着我的鼻子。一只鹈鹕的影子从池塘上方掠过，一只黄脚鹬则以颤音鸣啭着降落在湖面上。此情此景，不禁使我汗颜。我绞尽脑汁才能写出一首诗，而黄脚鹬只需动动它的脚，就能走出一首更优美的诗。

一只鼬在我后面滑行上岸，高耸着鼻子在空气中嗅着，追踪着猎物的气息。沼泽鹪鹩频繁穿梭往返于一堆[illegible]草丛，其间传来筑巢的喧嚷声。当我在太阳的烘烤下昏昏欲睡时，我突然发现湖面上露出了一个鸟头，机警的红眼睛四处打探着。待感觉一切正常后，整个银白色的躯体才浮出水面，鹅一般大小，轮廓像一枚细长的鱼雷。在我还没回过神的时候，第二只鹪鹩已经出现了。宽阔的后背上驮着两只珍珠般银色的幼鸟。每一只都恰到好处地被包围在栅栏般弓起的翅膀中。一切都发生得那么突然，我紧张得大气不敢出。果然，在我调整呼吸和卧姿想要仔细观赏时，4 只鹪鹩突然拐了

一个弯便不见了。只能听到芦苇背后那轻微且清脆、又带着嘲弄意味的叫声。

历史感应该是自然科学和人文科学中最宝贵的禀赋和资产。但是我却认为，丝毫不具备自然和人文科学知识的鹪鹩，比我们更懂得和了解历史。或许它们那混沌、原始的头脑对于究竟是谁赢得了哈斯汀之战一无所知，但它们对于究竟是谁赢得了时间之战却了如指掌。倘使人类能像鹪鹩的族类一样久远、古老，或许我们能更好地理解鹪鹩叫声中蕴含的深意。想想看，人类有自觉的历史才绵延几个世代，我们就能拥有这么多的传统、骄傲和智慧，那么，人类出现之前几十亿年前就已经存在的鹪鹩，对于自己在时间史上如此的绵延不绝，又会感到何等的骄傲？

事实上，根据某种奇特的权威性说法，鹪鹩的叫声是沼泽地纷繁复杂叫声中的主宰者和协调者。还有一种更为久远的说法认为，鹪鹩操纵着整个生物界的指挥棒。试想，当湖岸的巨浪为一个又一个沼泽制造一个又一个暗礁，导致水位逐年下降时，是谁在那里声嘶力竭地反对？是谁安排西谷椰子和鹿草执行吸吮存贮阳光和空气的任务，以保证冬天的时候巨稻鼠不至于饿死、沼泽地不至于因缺乏有生命的灌木而被杂草的茎蔓所吞噬？是谁安排鸭子在白天的时候耐心孵蛋，晚上则去撩拨嗜血的鼬的劫掠欲望？又是谁教导苍鹭用鱼叉般的长嘴捕鱼时要注意精确度、隼在觅食的时候要加快速度？但是由于我们听不懂鹪鹩告诫这些动物如何执行它们各自任务的声音，我们便以为这些告诫并不存在，以为它们捕食的技巧是与生俱来的，它们的勤奋是自发的，以为在动物界的词典中不存在“疲惫”二字。殊不知，不知疲倦的或许只有鹪鹩，也许正是鹪鹩在孜孜不倦地提醒它们，如果它们想生存，就必须不停地觅食和战斗，不停地繁殖和死亡。

曾经横卧于伊利诺州和阿塔巴斯加区之间平原上的那片沼泽地，如今正向北部急遽萎缩。人类不能仅凭沼泽地过活，因此需要学会在失去沼泽地的情况下生存。但是“进步”是偏狭而苛刻的，它不能容忍开化的、驯服的农田与未开化的、野生的沼泽地共存共荣。因此，社会进步了，沼泽地也就逐步消失了。

人们用挖泥机和堤坝、排水管和火炬吸干了沼泽地，种植玉米，如今又要种植小麦。慢慢的，蓝色的湖水变成了绿色的污泥，绿色的污泥变成了干涸的泥地，干涸的泥地变成了贫瘠的麦田。

总有一天，我钟情的这片沼泽地也会被筑上堤坝、抽干湖水、种植上小麦。昔日的沼泽地会慢慢被人遗忘，就像今日和昨日在时间的长河中也会被人遗忘一样。在最后一条沼泽荫鱼在最后一个池塘里最后一次摆动身体之前，燕鸥会尖叫着向克兰布依道别，天鹅会依然高贵优雅地向着高空旋飞而去，鹤群们也会吹起告别的号角。昔日繁盛的克兰布依会在表面的繁荣之下归于沉寂。

第三部分 乡野情趣

乡野

人们常常容易将土地和乡野混淆。实际上，土地是一种具体的场所，是玉米、沟渠、溪谷等所凭借的地方，而且土地还可以用来抵押。但是，乡野是一种抽象的气质，是土壤、生物和大气等等和谐共存所体现出的一种氛围。乡野不懂什么是抵押，不懂各式各样机构的用途，也不懂什么富贵与贫穷。对于那些自称“乡野所有者”们的追名逐利，乡野自持一种淡泊超然的态度。我那座农场的前任主人是一位酿私酒的贩子，但这一点对于农场上的松鸡而言毫不重要。它们高傲地飞翔在树丛中，仿佛国王的贵宾那样。

在松鸡们的眼中，贫瘠的土地可能是富足的乡野，反之亦然。只有经济学家才会简单地将物质上的充裕等同于完全意义上的富足。事实上，乡野也许存在着显而易见的物质上的匮乏，但它仍有可能是富足的。只是它的特质和富足在最初的时候不容易被觉察。

例如，我知道一个湖岸，一个有着松树和沙滩的凉爽而质朴的地方。整个白天，你会以为那只是个有沙浪拍击的所在，会以为那只是一条划船无法划到头的近乎黑色缎带的河流，会以为那只是一个用来标示海里数的单调的地方。但是一到黄昏，你可能会看到一只海鸥在微风的吹拂下越过一个岬角，而岬角背后突然出现的一群潜鸟会向你揭示一个隐秘小港湾的存在。进而你会产生到那个小港湾一探究竟的冲动。你想双脚踏在熊莓铺成的“地毯”上，想伸手去摘一株凤仙花，想去偷采海滨的梅子或是越橘，或者想去沙丘背后那片静谧的矮林中猎一只鹌鹑。接下来你可能又会想，既然这里有一个小港湾，说不定哪里会有一条遍布鳟鱼的小溪。于是，你兴奋地划起船桨，

任凭湖水激荡船舷形成一个个小旋涡，沙沙作响。船首迅速向对岸挺进，然后你上到岸边，在更茂密的树林中寻找宿营之处。

稍后，晚炊的轻烟懒散地飘浮在港湾上空，炊火在低矮的树枝下飘忽不定。这是一片贫瘠穷乏的土地，但却是一个韵味富足的乡野之地。

这里的一些树木虽然也是四季常青，但却并非风情万种。从路上远远望去，那些树身高大、树干平滑的橡树和美国鹅掌楸还是比较可观的，但是一旦你身入林中便会发现，原来那里的植物平淡无奇，溪水浑浊不堪，野生动物稀少。我无法解释为何原本以为是小溪的那条红色的缎带并非如想像那般；我也无法通过逻辑推理来解释，为何看起来像树林的地方因为没有鹌鹑的啼声和存在却原来是一片荆棘丛生的地方。然而，所有热爱户外运动的人们都知道，那些现象虽然无法解释，但的确是事实。那种认为野生动物就是供来打猎或是欣赏的观点是最大的谬误。持这种谬误的人通常只把野生动物的多寡视为区分土地贫瘠与否的唯一标准，故而常把韵味富足的乡野错认为是一片贫瘠的土地。

这里的树林表面看来平淡无奇，但深入其中却发现韵味无穷。原本再没有比玉米地带的林地更平淡的东西了，但如果是在 8 月间，一株被压碎的薄荷或是一个熟透了的盾叶鬼臼草的果实会告诉你，你来到这里会不虚此行。10 月的阳光照耀着山核桃树，无可挑剔地证明着这是一片富饶的乡野。因为那不仅仅会使你感受到山核桃树的存在，也会让你由此浮想联篇：或许这是黄昏中的橡树木炭，或许那是一只小松鼠，或许远方的声响是一只横斑林鸮对自己的笑话乐不可支。

不同的人对于乡野有不同的品味，就像对于戏曲或油画等的审美情趣和层次因人而异一样。有些人对于一些所谓的“ 风景区 ”趋之若鹜。对于他们来说，只要一座山区有瀑布、悬崖和湖水，它就是一座雄伟壮丽的山。而对他们来说，堪萨斯平原是枯燥乏味的。因为他们只能看到一望无际的玉米田，却不能欣赏到喘着气、咕噜咕噜叫着的牛群在平原上劳作时的美景。他们认为历史源于校园。他们能够看到低矮的地平线，但却不会像卡皮查 · 德 · 瓦卡那样，很有创意地从水牛的肚皮底下欣赏地平线。

乡野和人一样，平凡的外表下往往掩藏着隐秘的珍宝。如果你想发掘乡野的这些珍宝，就要住在乡野，用心去体会。长着刺柏的山麓丘陵是最乏味无趣的，但如果在一群啁啾的冠蓝鸦突然窜出一片亮丽的蓝色以后，这座沉寂上千年的古老山脉就不再乏味无趣了。3 月的玉米地也是最沉闷单调的，但如果在一只鸣叫的雁从空中向玉米地致礼以后，玉米地也就不再沉闷单调了。

人类的闲暇

下面的这句话是出自亚里奥斯图的一句至理名言，我记不清它的具体出处，但我

清晰地记着他说过，“一个无知的人在闲暇时是多么的悲惨啊！”

我所信奉的书本上的至理名言并不多，但这是其中之一。我很愿意大声宣告我对于这一真理的坚持，无论是过去、现在还是未来。不懂得享受闲暇的人是无知的，不管他拥有如何傲人的学历和学位；同样，懂得享受闲暇的人在某种程度上讲是有教养的，尽管他从没进过一所像样的学校。

我认为，让一个拥有数种嗜好的人向那些没有嗜好的人谈论提倡嗜好，是一个很愚蠢的错误。因为这意味着一个人向另外一个人推销某种嗜好，而这恰好抹杀了任何一种嗜好可能具有的所有优点。你无法驾驭嗜好，相反是嗜好驾驭你。向别人推销某种嗜好就像向别人推销妻子一样危险，达到圆满结局的可能都是微乎其微的。

那么，不管怎样，就把这种推销当成是那些非要做某些我们无法理解的事情的人们之间的一种交流心得吧。别人愿意听就让他们听好了，看看他们能否从中获益。

然而，究竟什么是嗜好呢？它与人们对于某种事物正常而普通的追求到底有什么区别呢？我至今无法获得令自己满意的回答。最初的时候，我武断地认为人们竞相追逐的嗜好大多是无用的，缺乏效率而又劳神费力的毫无意义的东西。也的确，当今大多数最时尚的嗜好主要是用手工制作某些东西，而这些东西通常用机器来做效率会更高，而且价更廉物更美。但是，客观公正地讲，在某个时代，纯粹地制造机器都有可能成为一种绝佳的嗜好。我有时就想，伽利略真正感到满意的，就是他发明了一种新的弹射器，更好地揭示了一些自然规律和法则，而之前的圣彼得因为疏忽而与之失之交臂。尽管伽利略的举动引起了教皇的恐慌继而引来杀身之祸。然而在当今世界，无论一项新机器的发明对于工业社会如何重要，但如果是作为一项嗜好就会让人感到陈腐无比。或许至此我们已触及问题的核心：嗜好是对同时代事物的叛逆和挑战。它是对于社会进化过程中背离或忽略的永恒价值的坚持。如果这种说法是正确的，那么我们就可以说每个有嗜好的人本质上都是个极端主义者，他们的同类本质上都属于少数派。

然而，这是一件很严肃的事情。嗜好拥有者们所犯的最严重的错误就是严肃地对待嗜好。因为所有的嗜好都不能作为一种目标去追求，也无须附加合理性的理由。想要去做就是最大最充分的理由。一旦试图去为某种嗜好添加“有用”或是“有益处”的光环，将会使这种嗜好沦为一种产业，沦为一种为了健康、权利或是利益而去竞逐的粗俗的游戏或运动。比如说，举哑铃就不是一项嗜好，它是为了锻炼身体，而非自由的伸张。

在我还是个孩子的时候，镇上的一个小平房里住着一位年迈的德国商人。每逢星期天，他都要到密西西比河，沿着河岸敲打突出来的石灰石暗礁岩面。他搜集了大量的石灰石碎片，并把所有的碎片都做了归类和整理。这些碎片中包含着一种已灭绝的叫作海百合的死亡水生物的化石。镇上的人都觉得这位温文尔雅的老人行为举止有些古怪，但他对人很友好，没有任何敌意。有一天，镇上的报纸报道说，镇上来了一些

“大人物”。据坊间流传，这些“大人物”都是非常了不起的科学家。其中一些来自别的国家，还有一些是世界顶级的古生物化石学权威。他们此行的目的是拜访那位行为怪异的老人，聆听他对于海百合的看法，并把这种看法视为金科玉律。当那位老人逝世以后，镇上的人才知道他原来是世界级的海百合权威，也是知识的缔造者、科学历史的提倡者之一。他是个伟大的人物——在他面前，当地企业所有的领导人都要相形见绌。老人所有的收藏都被国家博物馆妥善珍藏，他的名字也永远载入人类的史册。

我认识一位热爱玫瑰的银行总裁，玫瑰给他带来了快乐，也让他成为一名成功的银行家。我还认识一位热爱番茄的汽车轮胎制造商，他对番茄的种类如数家珍，但不知是对于番茄的热爱造就了他关于轮胎的知识，还是他对轮胎的精通造就了他对番茄的热爱，总之他对于汽车轮胎的知识几乎无所不晓。我还认识一位对于甜玉米近乎着迷的出租车司机。一旦给他机会，他会滔滔不绝地说上半天，你会奇怪他怎么知道那么多，你也会怀疑还有什么他不知道的。

当今世界我所知道的最有魅力的嗜好是近年重新兴起的猎鹰运动。但它在美国只有少数的沉迷者，在英国嗜好该项运动的人也为数不多。因为人们只需花两个半美分就可以购置一副弹药筒，扳机一扣就能射中苍鹭的巢，但如果用鹰来打猎就过于耗时费力。单单训练猎鹰和猎鹰的主人就需要少则月余、多则数年的时间。致命的弹药筒可以说是工业化学的一项杰出产品，对于弹药发挥威力的过程，人们可以列出方程式给予准确的评估；然而对于猎鹰的致命性，至今仍旧是个谜，一个生物进化过程中的谜。没有任何人能够理解或者试图去理解猎鹰那种捕猎的欲望和冲动何以强烈到近乎本能的地步。没有任何一架人工制造的机器能像猎鹰捕猎时达到目光、肌肉和羽翼的完美结合那样，实现各零部件的完美协调。被猎杀的苍鹭是无法食用的，因而是无用的（尽管老一辈的鹰猎者可能食用过，就像童子军用弹弓、木棍或是弓箭捕到一只深受跳蚤叮咬之苦的棉尾兔会将其熏烤吃了一样）。而且，在训练猎鹰的过程中每个环节都要特别留心，稍一疏忽便可能酿成大错。因为猎鹰可以像智人那样被驯化，但也有可能像出笼的鸟儿那样，飞向蓝天而一去不复返。总之，猎鹰术是一种完美的嗜好。

制造长弓和用长弓打猎是另外一个我所认为有魅力的嗜好。对于那些门外汉来说，他们总认为长弓在经验丰富的专家们手中是百发百中的有力武器，实则不然。每年秋天，威斯康辛州申请用长弓打猎的专家们只有寥寥不到百十人，而且百十号人中能有一个射中鹿就简直是奇迹了。然而用猎枪打猎的人，平均每 5 人当中就有 1 人能有收获。因此，作为一名长弓射手，也基于我们以前的射击纪录，我对那种“长弓在手，百发百中”的说法持强烈的否定态度。但有一点我必须承认：制造长弓的过程其乐无穷。为制造长弓而上班迟到或是忘了倒垃圾、做家务，我都认为是值得的。

一个人无法制造一杆枪，至少我不能。但是我可以制造弓箭，其中的一些还真能射中目标。由此我想起我们对于嗜好的定义或许也该变一变了。在当今这个时代，一种好的嗜好就是需要动手制作某种东西，或是动手制作可以制作某种东西的工具，

然后用这种东西去做一些旁人看来毫无用处的事情。当我们度过了这个时代，一种好的嗜好也许恰是以前所有良好嗜好的反面。也就是说，嗜好是对同时代事物的叛逆和挑战。

一项好的嗜好同时还必须是一种赌博。当我注视着那块用于制作弓的粗糙、笨重、多瘤、易裂的木材，想像着有一天竟能从其貌不扬的外表下产出一个完美、闪亮的武器，并且想像着“弯弓射大雕”时的英姿飒爽，我禁不住喜上眉梢。但同时我也必须想像另外一种可能性：大弓可能会在一霎那间裂成无用的碎片，之后，我必须历时月余地坐在枯燥的冷板凳上潜心制造另一弯弓。简而言之，所有的嗜好都潜含着一夕覆亡的命运，它不像单调却固定的汽车生产流水线，从一开始就可预测流水线的终端是完美的轿车。

一项好的嗜好可能是对于日常琐事的一种孤独的叛逆，也可能是一群志同道合者共同反叛传统的行为。有时候那群志同道合者是一个家庭的成员。无论是哪种情况，嗜好本质上都是一种反叛，如果这种反叛没有希望占据上风，结果反而更好。我实在无法想像出一种更为混乱的状况，比全国人民突然全部采取社会传统所认定的‘愚蠢”想法的后果更为严重。而实际上并不存在这样的危险。不墨守陈规，是社会动物进化所取得的最高阶成果，而且它的进化不会快于其他新的机能。最近的科学成果表明，无论是自由的野蛮人还是更无拘无束的哺乳动物和鸟类，严密的组织总是占据主流。或许嗜好就是造物主对于群居宇宙所承载的“等级制度”的第一种否定行为。而人类的大多数只是那个群居宇宙的一个组成部分。

环河

环河，是威斯康辛州的早期奇观之一。环河是一条“自给自足”的河流，首尾相接，源头汇入源尾，形成一条永无止境循环奔腾的河流。保罗·班扬最早发现了这条河流。在关于班扬的传记中，记载了班扬如何让许多原木漂流在环河那永不停歇的流水中。

没有人认为班扬在传记中所形容的事物只是一种比喻，但在环河这一点上例外。因为威斯康辛州不但有一条环状的河流，而且威斯康辛州本身就是一条“环河”。这条“环河”的水流是能量之流。它来源于土壤，途经植物、动物，最后又回归于土壤。如此循环往复，构成一个永恒的生命链条。“路归路、桥归桥”，威斯康辛州是“环河”概念的陆地版。

我们跨在顺着环河流淌的原木上，并对其进行了简单的改装，以控制原木的行驶方向和速度。而这一点，使我们冠上了聪明的现代人称号。改装的技术称作经济学，对于初始路线的回忆称作历史，对于新路线的选择称作政治才能，对于即将到来的浅

滩和急流的交谈称作政治。同行的一些人不但急欲改装他们自己的原木，而且还急欲改装整个“舰队”。这种人类与自然集体性的“讨价还价”，称之为国民计划。

在我们的教育体系中，很少将生物的循环体比喻成一条河流。从我们小时候起就被灌输各种各样的知识，包括构成环河渠道的土壤、植物群落和动物群落等的生物学知识，关于上述事物源起时间的地质学和进化学知识以及关于开发利用上述事物技巧等的农业学和工程学知识等等。但是，我们必须自己去推断什么样的河流会干旱、会发洪水、会有死水或沙洲。而要想了解生物循环链条中的水文学知识，我们必须对生物体的进化和集体性行为有正确的考察视角。这就需要与所谓的专业化“反其道而行之”。我们必须越来越多地关注整个生态地景，而非大费周章地去关注一些细枝末节。

如果说达尔文生物进化学说是一种纵向研究的科学，那么生态学就是旨在进行横向研究的科学。生态学起步很晚，它就像一个咿呀学语的婴儿，而且跟所有的婴儿一样，都在全神贯注地创造着属于自己的语言。但是这种语言真正发挥作用还有待时日。不过，生态学注定要成为属于环河的专门知识，尽管它有些姗姗来迟。它在试着将我们对于生物世界的集体智慧结晶的知识转化为生物世界将来发展方向的指针。也就是说，要进行自然资源和生态的保护。

自然资源和生态的保护是人类与其生存的土地之间的一种和谐共存的状态。这里的土地是指地球表面、上空及地表内部的一切事物。与土地和谐相处就像与朋友和谐相处一样，你不能只珍视它的“右手”而要把“左手”砍掉。换句话说，你不能只偏好猎物而憎恨食肉动物；你不能只保护河流而乱伐森林；你也不能只保护森林而要破坏耕地。土地是一个有机体，它的组成部分就像人体的各个组成部分一样，彼此之间是一种竞争与合作的关系，而且竞争与合作都是有机体内部运作的一部分，不可偏废，你只能小心翼翼地调节它们，而不能废除它们。

20世纪最伟大的科学发明不是电视机和收音机，而是土地作为一个有机体复杂性的揭示。越是对此了解深刻的人越是感到自己在这方面知识的苍白。只有那些最无知的人才会认为动物或植物没有什么用处。而且，不管我们理解与否，如果土地这个有机体整体运转是良好的，那么每一个组成部分必然也是良好的。如果在数十亿年的演进过程中形成的生物群落已构筑了某些我们喜欢但并不了解的东西，那么除非傻瓜才愿意把一些看似无用的部分抛弃掉。因此，保存好每一个组成部分，是我们在修护自然界时首先应考虑的。

那么，我们是否已掌握了环境及生态保护的首要准则——保护好土地有机体的所有组成部分？答案是否定的。因为即使是那些科学家也不能全然了解土地这个有机体。

德国有一座山叫作许佩沙特山，山的南部生长着世界上最雄伟的橡树。当美国的家具制造商需要最优质的木材时，他们便会想起许佩沙特山上的橡树。山的北部按说应出产更优良的木材，却仅生长着一种普通的欧洲赤松。这是为什么呢？无论是山的北部还是南部，都属于同一国有森林的一部分，并且在过去的两百年间都受到了同等

精心的呵护，那么是什么原因造成了这种差异呢？

踢开橡树下的枯枝落叶，你会发现那些叶子几乎是一落地就开始了腐烂。而松树下的情形就截然不同了。落叶就像针芒一样堆成厚厚的一堆，只有一小部分开始了腐烂，而且速度极慢。为什么呢？原因还要上溯到中世纪。那时，一位酷爱打猎的主教把南半部的山坡辟为猎鹿场，北半部的山坡则由前来拓荒的人作为牧场和耕地，就像如今我们在威斯康辛州和爱荷华州的林地上的所作所为一样。直到那段乱砍滥伐滥垦的时期过了以后，山的北部才重新种上了松树。但是，时过境迁，经过乱砍滥伐滥垦之后，山北部的土壤于细微之处已发生了巨大的变化。土壤中微小的植物群和动物群的种类大大降低，从而使土壤丧失了众多的“消化器官”。尽管经过两个世纪的维护，仍不足以弥补那些损失。看来，人们需要现代的显微镜和再过相当长一段时间的土壤科学研究，才有可能摸索清楚是哪些“零部件”决定了许佩沙特山的土地与人类之间和谐与否。

为了生存，生物群落内部的运转过程必须保持平衡，否则生存于其中的一些物种就有可能消逝。众所周知，一些生物群落的确存活了很长一段时间。比如说，1840 年的威斯康辛州，它所拥有的土壤、植物群及动物群与 12000 年以前冰河时代末期所拥有的几乎完全相同。我们知道这一点是因为威斯康辛州的动物尸体和植物花粉都保存在泥炭沼泽里。由于泥炭岩层是连续的，不同时期不同花粉的富含量还能记载当时的气候状况。比如说，你在公元前 3000 年的泥炭层发现大量的豚草花粉时，你就可以推测，当时若不是发生了几次干旱，就是曾有一大群水牛在此地过度啃噬，要么就是曾经发生过几场大火。但是，重重危机并没有使这个地方成为不毛之地。大概 350 种鸟类、90 种哺乳动物、150 种鱼类、70 种爬行动物和成千上万种昆虫和植物在此地繁衍生存。而上述所有生物几百年生生不息，并且自始至终整个生物群落保持了惊人的相似和稳定，就是因为这个生物群落一直保持着内部的和谐与平衡，不管外部环境发生怎样恶劣的变化。而科学至今无法解释生物群落保持平衡稳定的内部机能到底是怎么一回事。但是，即便不具备科学知识，我们也可以看到一个稳定的生物群落至少有下面两种表现：一是土壤的肥力在精细平衡的食物链上循环积累的速度会和消耗流失的速度一样快，甚至会更快；二是土壤肥力的累积与生物群落的多样性成正比，稳定性与多样性是相互依赖和相互作用的。

我觉得美国的环保很大程度上还只是做做样子。我们至今还没有学会从大自然各个组成部分的角度去思考问题。看看我们自己的后院：爱荷华州和南威斯康辛州的大草原。草原上最珍贵的东西就是肥沃的黑土壤，也即黑钙土。那么，黑钙土是怎么得来的呢？原来是草原上的生物，即上百种物种相异的草、草本植物、灌木、真菌、昆虫、细菌、哺乳动物和鸟类，它们共同构成了一个既相互竞争又相互合作的生机勃勃的和谐的小社区，或者是生物群落。这个生物群落，经过漫长的演进，历经火烧和复原、捕食和逃亡、冰冻和消融，终于构成了那片我们称之为草原的黑土地。

我们的祖先不知道也无法知道他们赖以生存的这片草原的起源。他们肆意消灭草原上的动物和植物，以修建铁路和公路。对于他们而言，植物群落仅仅是杂草和灌木，因此会毫不留情地用压路机和割草机将其去除。而经过这样的折腾，任何一个植物学家都可以预测这座草原大花园将来的命运——沦落为偃麦草的孳生温床。草原大花园消失以后，高速公路管理部门雇佣园林设计师用榆树、欧洲赤松、日本伏牛花和绣线菊属植物等装点那片偃麦草地。环保委员会的官员们在奔赴一些重要会议途经此地时，还会为那种美化道路的举动和热情赞叹不已。

但是总有一天，我们会为我们做的一切懊丧不已。草原上的植物群落不但可以美化环境，而且能够固存、重建草原上土壤的养分。失去植物群落中的生物物种，也即意味着失去土壤中大部分的养分。我们改造大草原的本意是好的，但是因为没有意识到自然界各个组成部分的功用，我们的目的和结果往往是南辕北辙。

我们总是关注自然界中“大环境”的保护，这说明我们还是相当幼稚的。每当一个物种濒临灭绝时，小小的抱憾就足以让我们宽慰。而当这个物种已经灭绝时，我们可能会痛定思痛一番，但很快又会重蹈覆辙。

最近西部一些州由于畜牧业的兴起而导致灰熊的灭绝就是一个发人深省的例子。当然，我们在黄石国家公园还有一些灰熊，但是那些灰熊不仅饱受各种“远道而来”的寄生虫的侵害，而且在它们栖息地的边缘，还有很多来复枪等在那里，准备结果它们的性命。另外，新度假场所和新道路的开辟还在不断缩小着灰熊们的生存范围。每年，我们只能在愈来愈少的州里面愈来愈少的繁殖区内，看到愈来愈少的灰熊。我们不断地用一种其实是很荒谬的说法来聊以自慰，即只要有一只灰熊能够残留在博物馆供人们观赏就够了。殊不知，历史的真理在清晰地揭示着：要想保留一个物种，就必须让它在很多地方存活。

我们需要关于大自然各个组成部分的知识，也需要大众在这方面的觉醒。但有时我想我们更需要一样东西，这种东西在《森林和溪流》杂志编辑们的手下被称之为“对于大自然的精致品味”。那么在这方面，我们有什么进展呢？

在沿湖各州的北部，还残存一些狼，每个州都在悬赏捕杀。而且这些州还会求助于美国鱼类及野生动物署的专家来控制和消灭狼群。然而美国鱼类及野生动物署的专家和环保部门的官员们继而开始抱怨鹿群的过于庞大以致于无法找到充足的食物。森

林中的居民也开始抱怨周期性的兔满为患。那么，为什么要把消灭狼作为公共政策呢？在经济学界和生物学界引发了一场辩论。哺乳动物学者认为狼是鹿的天敌，保护狼可以遏止鹿群的激增。猎人们说他们会处理过多的鹿。公说公有理，婆说婆有理，双方争执不下，再过 10 年看来都不会争论出结果。然而真到那时可能就没有狼可供人们争论了。这些生态保护的观点总是相互矛盾。

沿湖各州的森林植被保护和重新绿化昔日的北部森林所取得的成果一直是我们引以为傲的事情。但是仔细观察一下那些森林，你会发现其中没有白扁柏和美洲落叶松。为什么没有白扁柏呢？因为它不但生长得非常缓慢，而且有被鹿吃掉之虞，同时还受着桤木的排挤。但是，没有白扁柏的森林并没有让林务官们灰心丧气。实际上，白扁柏曾因为经济效益不彰而被清除过。由于同样的原因，山毛榉也被排除在东南部未来森林的规划之外。除了这些人为地消除某些植物物种，还有一些消逝的物种是根源于我们无法控制的疾病的侵害。栗树、柿树和北美五针松都是那些疾病的受害者。合理的经济学是否会把每种植物都视为独立的个体，再根据其各自的特性来决定是推广还是减灭？此举对于动物的生活、土壤以及森林作为一个有机体的“ 健康 ”会有什么影响？如果你有“ 对于大自然的精致品味 ”，那么你会发现经济问题仅是一种个别考量。

我们这些班扬的继承人，既不知道我们对河流做了什么，也不知道河流对我们做了什么。我们只知道满怀激情地为这个州的原木去掉多余的节，虽然技巧并不怎么娴熟。

我们已彻底改变了生态链这条“ 环河 ”。我们是不得已而为之的。现在的食物链条是从玉米和紫花苜蓿开始的，而不是以往的橡树和须芒草；期间流经的是牛、猪和家禽，而不是以往的麋鹿、鹿和松鸡；最后进入的是农夫、摩登女郎和大学新生，而不是以往的印第安人。只要查询一下电话簿或是政府机关的花名册，你就知道现在的食物链条流量有多大。现在的生态链条的流量恐怕要远远高于班扬之前的那个时代。但奇怪的是，科学从来没有衡量过它。

人工饲养、栽培的动植物在新的食物链条中，不具备链环所应具有的连接力。它们之所以能够维持下去，得益于农夫们的辛勤劳动和机车农具的作用。同时还有“ 农学博士 ”的支持和帮助。班扬消除树节的技能是自学得来的，而我们现在却有“ 农学博士 ”给予的免费指导。

每一次人工饲养、栽培的动植物替换野生动植物，每一次人工挖掘的运河替代自然水路，都要伴随着这块土地生态循环系统的一次重新调整。我们无从了解也无法预测这种调整。我们甚至觉察不出那种调整和变化，除非最后的效果不理想。不管是美国总统为了修建航行运河而重建佛罗里达州，也不管是农夫张三李四为了牧牛场而重建威斯康辛草原，我们只是忙于做一些生态破坏后的修补工作，根本无暇考虑最终的结果。而如此多的修修补补却没有给这片土地带来难以承受的灾难，足见土地作为有机体的活力和弹性。

生态教育使人们意识到的惩罚性后果之一，就是我们将孤独地生活在一个满目疮痍的世界上。然而人类加之于土地的种种破坏，是普通人难以觉察得到的。一位生态学家要么应该狠下心来，自欺欺人地相信科学进步带来的负面后果与其无关，要么应该承担起一位医生的职责，给那些认为自己很健康、听不进反对意见的人们敲响死亡的警钟。

政府告诉我们需要控制洪涝灾害，所以我们把农场上的河流截弯取直。负责此项工作的工程师告诉我们，现在的河流可以载负更多的水流，不致酿成水灾。但是，我们却由此丧失了老柳树，也由此丧失了冬夜栖息其上的猫头鹰的号叫和在夏日的阴凉中拍打苍蝇的牛的悠闲。同时，我们也丧失了盛开着绶裂龙胆的小小的沼泽地。

水利学者早就指出，河流的蜿蜒曲折在水利功能上扮演着不可或缺的角色。冲积平原本质上属于河流的一部分。基于同样的原因，生态学家清楚地告诉我们，人类可以与较少人工改造痕迹的环河和谐共处。

现在，我们用两个标准来评估新的生态秩序：一是它能保持土壤的肥力吗？二是它能保持生物群落的多样性吗？在最初的拓荒阶段，土壤能够展示动植物盎然的生机。众所周知，感恩节就是拓荒者们为了感谢富足的谷物收成而来的。但是在那个阶段，野生动植物也是非常丰饶的。许多外来的、能够开花结果的杂草也加入了本地的植物群落。土壤依然肥沃，但是地景地貌却由于耕地和牧场的出现而变得多样化起来。开拓者所记载的野生生物的多样性一定程度上是对这种多样化的反映。

但凡一个新发现的陆地，都以高速运转的新陈代谢为特征。这种现象也许是对正常生态循环的反映，也有可能是对土地固有肥力入不敷出的消耗。对于这种入不敷出的消耗，有一个形象的称谓是“生物热”。我们无法像测试人的体温那样测试这种“生物热”的程度，只能根据它对土壤的既成影响来判断。那么，既成影响又指什么呢？答案就写在成千上万块农地的沟渠上。然而，每亩农作物的产量并没有随着灌溉技术的提高而有所增加。原因在于耕作技术的大幅改进只能抵消土壤肥力的损耗。在一些地区，比如说干旱尘暴区，生态循环基本处于停滞的状态。班扬的后代们只能迁徙到加利福尼亚州继续酝酿“愤怒的葡萄”。

说起多样性，我们有些原始的动植物群落之所以还能残存下来，是因为农业的发展还没来得及消灭它们。目前关于农业的理想目标是发展“纯净农业”，即建立一条纯粹追求经济效益的食物链条，将所有与之相悖的链环消除掉。多样性的另外一层含义是指建立一条基于追求稳定、多产和美等共同利益，协调野生生物与饲养生物的关系，使之和谐共处的生态链条。

毫无疑问，发展“纯净农业”是为了改造土壤。但是它仅仅是利用外来的植物、动物和肥料来实现这个目标。它并没有意识到最初构成这片大地的原始动植物群落的重要性。外来的动植物之间能否整合出稳定性？化肥能有效地提升土壤的肥力吗？这些都是人们争论不休的问题。

然而，没有谁能真正搞清楚这些问题。唯一能够证明发展“纯净农业”是可行的地方只是在东北欧。在那里，尽管整个地景地貌都有人工改造的痕迹，但生态链条还是保持了一定程度的稳定。

除了东北欧，其他所有曾经尝试过建立“纯净农业”的地方（包括我们这里）都遭到了失败。因为生态链条有一只看不见但却实实在在发挥作用的手，那就是多样性和稳定性是一体的两面，彼此紧密联系，相互作用。

我有一只名叫格斯的猎狗。当格斯猎不到野鸡时，它便对北美黑脸田鸡和草地鹨产生了兴趣。这种被激起来的、对于并不十分满意的替代品的激情，掩盖了它无法找到真正猎物的失败，多少也抚平了它内心的挫败感。

我们这些环保主义者其实就像格斯一样。二三十年前，我们说服美国土地所有者们防范大火、造林养林、控制野生生物，但结果并不理想。实际上，我们没有有效的林业管理。而土地的私有者们很少会主动地去管理山脊、野生动植物，也没有控制污染、防止水土流失的意识。而且在许多情况下，对于私有土地的滥垦乱伐比在我们建议他们如何去做之前更为严重。你如果不相信的话，就请看看加拿大草原上熊熊燃烧的麦杆堆，看看肥沃的泥土如何流失进格兰德河，看看冲蚀沟如何遍布帕劳瑟山和奥扎克山的山坡以及南爱荷华州和西威斯康辛州的分水岭。

为了掩盖这种失败，也为了多少抚平我们内心的挫败感，我们为自己找到了一只治疗心灵的草地鹨。我不知道是谁最先找到了这只草地鹨，我只知道这块土地上的所有人都在积极地寻找草地鹨作为自己行为的背书，我也不例外。治疗心灵的草地鹨就是指：既然土地私有者不愿进行环保，我们就建一个专门的环保局，替他们做那些事情。

像真正的草地鹨一样，心灵的草地鹨也有它的好处。它看上去仿佛是成功的，因为环保局可以购买贫瘠的土地加以改善。但是问题在于，它没有办法阻止优良的私人土地不断变成贫瘠的国有土地。在我们抚平内心挫败感的时候，其实我们正面临着另外一种危险，我们并没有找到真正的解决问题之道。

我想草地鹨也不会提醒我们所面临的危险。它正为自己突然备受青睐而沾沾自喜呢！

考虑到贯穿在土地滥用过程中的获利动机及其取得的巨大成就，人们对于土地修护过程中是否应该摒弃利益至上主义感到犹豫不决。而我认为人们过于夸大了利益至上主义的功能。想想看，一个人为自己建造一个漂亮的家，有利可图吗？我们让自己的子女接受高等教育，有利可图吗？这些事情大半是无利可图的，但我们还是要那样去做。实际上，这些都是在进行经济价值思考时的道德和美学前提。一旦接受了这些前提，经济驱动力常常会整合社会组织的方方面面，使之与其和谐相处。

然而，在我们的孩子必须生存的这片土地上，我还没有看到道德和美学的前提被纳入人们的思考。在历史的卷册上，我们的孩子会为我们签名。我们的土地仅仅是我

们挣钱的地方和工具。只要有足够的利润和收益可让我们供孩子们上大学，即便农场遭侵蚀、森林遭破坏、河流遭污染，又能如何呢？因为迄今为止，上述行为并没有遭到社会道德的谴责。而且不管土地出了什么问题，反正政府会来治理。

我想至此我们可以找到问题的根源。环保教育必须建立在两个基础之上：一是在追求经济利益的同时，要注重伦理道德；二是要认识到土地是个有机体，各个部分不可偏废，并且要将这种认识加以普及。只有这样，环保才能真正收到实效。

大自然的历史

不久前一个周六的晚上，两个中年农夫把闹钟设定在次日凌晨。那是一个大雪纷飞、狂风凛冽的冬日。挤好牛奶之后，他们搭上一辆小货车，向威斯康辛州中部的沙郡进发。那里盛产美洲落叶松和野饲草，同时还是开具因抵还欠税而公卖的房地产买主永久性契据的地方。傍晚的时候，他们怀着一颗充满冒险和刺激的心，带着一卡车的美洲落叶松树苗满载而归。借着灯笼的光亮，他们在自己家附近的沼泽地上栽完了那些树苗，接着再去挤奶。

在威斯康辛洲，比起“农夫种植美洲落叶松”来说，“人咬狗”只能算陈旧的新闻。因为自从 1840 年以来，我们的农夫就开始砍伐、焚烧美洲落叶松，而且还修建了沟沟渠渠来排水。只要有这些农夫居住的地方，美洲落叶松几乎都被灭绝了。而现在他们为什么又想栽种这些树了呢？原来他们终于意识到美洲落叶松灭绝后接踵而来的灾难。现在他们想重新恢复原有那片森林下面的泥炭藓，还有凤仙花、猪笼草以及其他几乎已经绝迹的威斯康辛州原始沼泽地的野花。

没有哪个政府部门会给农夫们这种近乎唐吉诃德式的狂热行为提供任何奖励，也没有任何利益动机刺激农夫们那样去做。那么我们应该如何看待农夫们的这种行为呢？我认为这是一种反叛——一种对于土地利用中纯粹利益至上主义的反叛。我们想当然地认为，要生活在这片土地上，就要征服它；最好的农田就是充分开垦的农田。而那两位农夫从实践中得来的与我们的想当然恰恰相反。因为充分开垦的农田给他们带来的不但是微薄的生计，而且是捉襟见肘的生活。他们发现，种植野生作物与种植农作物一样，都能从中获得乐趣。因此，他们计划专门辟出一小块沼泽地种植当地的野花。也许，他们对于土地的希望就像我们对于自己孩子的希望那样，不但要寻求谋生的机会，还要寻求机会去展示、发展内在的各种各样的能力，包括天生的和后天培养的。有什么可以比最初就生长在这片土地上的植物更能展示土地特性的呢？

总之，我认为我们可以从野生的事物中获得乐趣。关于自然史的研究是消遣和科学的结合。

但是，历史并没有让轻松的自然史研究如愿以偿。因为有太多的过失，等着我们

这些自然主义者去补救。曾经有一个时期，绅士和淑女们喜欢去野外郊游。他们大多不是为了探索自然的奥妙，更多的是为了搜集茶余饭后的谈资。那是一个见了什么鸟都称之为“小鸟”的时代，是一个用拙劣的诗文来表达植物学的时代，是一个只会叫嚷“大自然太壮观”的时代。但是只要浏览一下当今鸟生物学和植物学的业余杂志，你就会发现一种新的态度正日益变得普遍。但是这种态度并不是我们当今正规教育体系下的产物。

我认识一位工业化学家，他把业余时间全用在旅鸽历史的重建和作为我们生物群落一员的旅鸽戏剧性灭亡的研究上。在这位化学家出生之前，旅鸽其实就已经灭绝了。但是他却获得了比以往任何人都更为翔实的关于旅鸽的资料。他几乎阅遍了我们这个州所刊印的所有报纸，同时还阅读了大量当代的日记、信件和书籍。我估计他在搜集关于旅鸽知识的过程中，所翻阅的资料不下 10 万份。如此繁重又繁琐的劳动，任何其他有志从事这项研究的人都有可能“为伊消得人憔悴”。但是他就像猎人翻山越岭追逐稀有的鹿、考古学家遍访埃及各个角落寻找甲虫形雕像那样，充满了无比的激情和乐趣。当然，这位化学家的工作还不仅仅限于简单的追踪和寻访，追踪和寻访之后，还需要一种最高的技能，即如何诠释这些得来不易的资料。而且，这种技能是“前无古人”的，无法从他人身上学到，只能边挖掘资料边潜心研究。如今，那位化学家正在被当代历史遗忘的角落里，在数以百万计的平庸之人认为枯燥乏味的领域里，边探索边研究，边研究边消遣。

另一个从事类似探索的是俄亥俄州的一位普通家庭妇女。这次的研究对象是北美歌雀。这种常见的鸟早在 100 年前就有人进行过科学的研究和分类，但之后便被人们遗忘了。可我们这位俄亥俄州的业余爱好者却认为，鸟类就像人类一样，除了名字、性别和着装之外，还有很多事情值得研究。于是，她开始在她的花园里捕捉北美歌雀，并用赛璐珞脚环给每一只歌雀做上标记，这样她就可以根据不同的脚环颜色辨别每一只歌雀。接下来她便留心观察并记录这些鸟在迁徙、觅食、打斗、歌唱、交配、筑巢、死亡等方面的特点和差别。简而言之，她是想了解北美歌雀作为一个小群落内部运做的情况。10 年下来，她对于歌雀生活习性的了解，要多于任何人对任何鸟的了解。10 年的“无心插柳”，却为她敞开了科学的大门。全世界的鸟类学家都慕名前去拜访求教于她。

上面提到的这两位业余爱好者碰巧都出了名，但是在他们最先开始研究以及在研究的过程中并没有名利因素作为驱动。那些名誉和地位完全是他们意料之外的收获。然而我想谈的还不是名利。因为他们所获得的个人满足要比名利重要得多。此外，成百上千的业余爱好者们也在他们各自感兴趣的领域获得了个人的满足。现在我就想问：在自然史领域，我们目前的教育体制有鼓励人们去从事那样的业余爱好研究吗？我们顺道拜访一下一个典型生物学系的一堂典型课堂可能就会知道答案。在那里，我们发现学生们正在背诵猫骨头上那些隆起部位的名称。不可否认，研究骨骼当然很重

要，不然我们无法理解动物从产生到进化的过程。但是为什么要记忆那些隆起部位的名称呢？有人告诉我们说那是生物学学科训练的一部分。但是我又想问：难道对于目前所存在的生物以及它们在生物界中如何固守自己“阵地”的研究不是同等重要吗？然而遗憾的是，目前生物学学科体系实际已经把活生物的研究排斥在外。比如说我所在的学校，根本没有开设鸟生物课程和哺乳动物学课程。

植物学科教育的情形也是如此。除非对于现存植物研究的兴趣没有那么极端和强烈。

户外现存生物的研究被逐出学校教育的主流，其原因也由来已久。实验室生物学诞生时，自然史的业余研究仅仅处在见了什么鸟都称之为“小鸟”的萌芽阶段。而自然史的专业研究则已发展到相当的阶段。专业人员们已开始给各个物种分门别类，并且收集了那些物种的觅食习惯和知识，只是没有进一步去诠释和研究。总之，在那时，相对于落后的户外研究，实验室研究是一个欣欣向荣而又非常重要的手段和阵地。因而理所当然地，实验室生物学很快就被推崇为科学研究的高级形式。随着实验室生物学的发展，自然史的业余研究就被排斥于科学教育体系之外了。

目前，学校教育中兴起的背诵骨头地理学的马拉松式的比赛就是实验室生物学成为优势学科之后的产物。当然，兴起的原因还有别的理由。比如说医科学生需要它、动物学老师需要它。但是我认为普通民众并不需要它，他们更需要的是对外部世界的了解和认识。

在实验室生物学逐步占据上风的过程中，户外研究在研究手段和研究理念上也日趋科学化，可以说与实验室生物学不相上下。学生中的户外研究业余爱好者已经不再满足于轻松地漫步于乡间，然后列出一连串生物物种的名称以及它们迁徙的时间等。给鸟上脚环、在羽毛上做记号、统计鸟数、研究鸟的行为及与周围环境的互动等，开始成为大众化的研究手段。而户外研究业余爱好者们只要具备一定的想像力和毅力，他们就能够选择解决一些真正的科学自然史中的问题。

比较现代的观点是把实验室生物学和户外研究作为相互补充的两种手段，而非相互竞争、相互排斥。然而学校的课程设置还是显得有些滞后。因为添加课程需要经费，因此在一般的大学里面，那些对自然史感兴趣的同学，其爱好非但没有受到鼓励，反而还受到压制。学校仅教他们怎样解剖猫，而没有鼓励他们带着欣赏和智慧的眼光去观察体会他们国家的乡野。如果可能的话，应该让学生接受上面的两种教育。但如果必须是二选一的话，那么应该宁肯选后者。

生物学教育是塑造国民素质的途径之一。然而目前的生物学教育极其偏颇、贫乏。下面的例子对此可略窥一斑。挑几个学校认为是典型的优秀学生一起到郊外走走。我们几乎可以肯定，这些学生对于植物生长的过程、猫身体的结构能做到了如指掌。但是如果问他们土地的各个组成部分是如何协调运转的，他们可能会哑口无言。

那次我们是在密苏里州北部的一个乡间道路上驱车南下。我们来到一个农场，看

看院子里的树，再看看田地里的土壤，我们考了那些学生几个问题：这里原来是平原还是森林？这里的居民感恩节吃什么，是草原榛鸡还是野火鸡？这里最原始的植物是什么，现在为什么绝迹了？草原上的植物与土地的玉米产量之间有什么关系？这里的土壤为什么现在没有以前肥沃了？对于这些问题，他们无法做出回答。

再比如，假定我们还是在密苏里州旅游。这次到的是一块废弃的田地，稀稀疏疏地长着一些矮小的豚草。我们再问那些学生几个问题：从目前的情形，你能否判断为什么这块土地会让农人们劳而无获？这种情况是从什么时候开始的？这块土地是捕捉鹌鹑的天堂吗？矮小稀疏的豚草与那边墓冢里沉睡的人们之间有什么联系？如果整个流域的豚草都是又矮又小，它是否预示着这条河流终将泛滥成灾的命运？继而能否影响到这条河流里的鲈鱼和鳟鱼？

这些学生不但回答不上来，而且还认为这些问题稀奇古怪，匪夷所思。其实，任何一个业余的自然史爱好者都能够用一双敏锐的眼睛去认真观察并且思考上面那些问题。而且在观察与思考的过程中，他们总能发掘无穷的乐趣。我们知道，现代自然史仅是偶尔才关注一下动植物本身以及它们的习惯和行为。现代自然史主要关注的是动植物之间的关系、它们与其赖以成长的土壤与水之间的关系，以及它们与只会歌功颂德但根本不理会自然有机体内部运做规律的人类之间的关系。这些研究事物之间关系的科学称为生态学。但是叫什么名称并不重要，重要的是接受过这种生态学教育的人们能否知道：他们只是整个生态系统中一颗微不足道的螺丝钉？如果他们能与整个系统和谐相处，他们的物质财富和精神财富可以无止境地延伸？但是如果他们破坏了系统的平衡与和谐，他们终将一无所有？如果那种生态学不能教会我们这些，要那种生态学又有什么用呢？

我们永远无法做到与土地完全意义上的和谐相处，就像我们无法为人类争取彻底的公义和自由一样。在为这些崇高目标而奋斗时，重要的不是奋斗的结果，而是奋斗的过程。只有在保持系统平衡稳定性的前提下努力奋斗，我们才能够期望种瓜得瓜，种豆得豆，劳有所获。

当我们说“奋斗”时，一开始我们就承认奋斗的力量应源自内心，应是自发的。没有任何外在的力量可以鞭策一个人不遗余力地为着某种理想而奋斗。

因此，我们面临的问题是，当大多数人们已漠视土地作为一个有机体客观存在的情况下，

在当今的教育和文化体系已与科学认识土地脱节的情况下，如何才能让人们自发地与自然和谐相处。这些都是“环境及自然资源保护教育”亟待解决的问题。

透视美国文化中的野生生物

原始人类文化的建构离不开野生生物。比如说，住在平原上的古印第安人不但以水牛为食物，而且其房屋建筑、衣着服饰、语言、艺术和宗教等，很大程度上也受到了水牛的影响。

对于现代文明人而言，文化的基础发生了很大变迁，但仍保有野生生物的原始基础。这里，我们就来讨论一下作为文化基础之一的野生生物的价值。

没有人能对文化进行量化分析，我也就不浪费时间做无用功了。但是，有理性的人都会同意，在与野生生物重新发生联系的运动、习俗和体验中，我们都能发现文化的价值。说这一点就足够了，并且由此我大胆地将这些价值分为三类：

第一类，当某种体验能够唤起我们对于本民族起源及历史的认同和热爱时，亦即能唤起我们的历史意识时，那便是一种价值。就其最佳的意义而言，这种意识应该是一种“民族主义”。我下面要举的例子就是“民族主义”的一种形态。由于没有更简洁的称谓，我姑且称之为“拓荒精神”。比如说，一个童子军鞣了一顶浣熊皮帽，然后到路边的柳树丛中模仿丹尼尔·布恩（译注：1734～1820，美国开拓者，民间传奇英雄和肯塔基州殖民运动的中心人物）的样子。这时我们就可以说他在重新上演美国的历史。在某种程度上，他在文化观念上已准备直面现实生活中的黑暗和残酷。再比如，一个农家子弟带着麝香鼠的气味走进教室。原来他早饭前去查看了他捕捉麝香鼠的陷阱。这时我们可以说他在重演皮毛交易的传奇史。

第二类，当某种体验能够使我们意识到人类对于土壤——植物——动物——人类这一食物链的依赖时，或者能使我们意识到生物群落基本组织的重要性时，那也是一种价值。文明的进步，反而因为有太多的精密器械和媒介涉入其中，而使人类与自然之间的这种基本关系变得混乱，从而使人们渐渐忘却了人类与自然之间的那种关系。我们只以为是工业支撑了我们的日常生活，却不知道工业的支撑又是什么。过去，教育使人们贴近泥土，而非远离泥土。有一首童谣描述了一个人带了一张兔皮回家，用它做包裹婴儿的睡袋。这样的童谣使人们想起人类曾经靠打猎来维持家庭生计。

第三类，当某种体验能凸显被统称为“狩猎道德”的伦理约束时，那也是一种价值。人类狩猎工具的改善比人类自身的改善还要迅速。“狩猎道德”主动地约束人们对于先进狩猎工具的使用，其目的在于强调技艺在狩猎时的角色，淡化先进器具的作用。

“狩猎道德”中有一点比较特殊。即一般来讲，猎人在打猎时，旁边既没有旁观

者为其行为喝彩，也没有旁观者对其行为提出质疑。总之，无论做什么，指导其行为的是猎人自己的良心，而非旁观者。对于这一点，我们很难夸大它的重要性。

主动遵守“狩猎道德”可以提升猎人的自尊，但同时，忽视或违反“狩猎道德”会使猎人堕落。举个例子来说，“狩猎道德”中有一条公共准则，即不能做无谓的浪费。然而现在有一个不争的事实，在威斯康辛州，猎人平均每猎到两头合法的雄鹿，就会白白地射死至少一头母鹿和一头未满一岁的小鹿。他们把公鹿带走，却任由母鹿和小鹿尸卧林中。换句话说，大概有一半的猎人在猎到法律允许射杀的雄鹿之前，会见鹿就射，见鹿就杀，毫无顾忌。而不该射的猎物被射到后，他们不闻不问，视若无睹。像这样的狩鹿行为不但为社会道德所不齿，长此以往，还会大大腐蚀猎人的职业道德，侵蚀到其他的狩猎领域。

如此看来，拓荒精神、人类与自然的关系，要么是没有价值，要么是有正面价值。而在伦理道德领域，除去零价值和正面价值之外，似乎还有负面价值。

而这也约略界定了我们户外活动的三种文化养分的根基，但它并不意味着文化由此获得了滋养。因为价值的萃取从来都不是自动自发的，只有健康的文化才能左右逢源，茁壮成长。那么，我们目前户外运动的形式能否使文化获得滋养呢？

拓荒时期产生了两种观念，成为当时户外运动、拓荒精神的核心价值。一是要轻装上阵，二是要百发百中。拓荒者们必须一切从简。而且由于缺乏交通工具、现金和制准武器，他们必须能够既经济又准确地射击。我们应该明白，起初人们不得不接受那两种观念，是因为他们必须服从现实。

然而，在以后的发展进化过程中，那两种观念成为户外活动的道德准则，成为人们在狩猎过程中自觉遵守的伦理教条。而美国典型的自力更生、大胆刚毅、充沛的山林野外知识和精湛的射击术传统也是建立在那两种观念基础上的。这些传统是无形的，但却不是抽象的。西奥多·罗斯福是一个伟大的“户外运动家”，不是因为他有很多战利品，而是因为他能用任何人都能听得懂的语言来表达那种无形的美国传统和精神。另外，在斯图尔特·爱德华·怀特早期的作品中，我们能找到对于这种传统和精神的更为细腻和准确的表达。我们大致可以说，这些人凭借对于文化价值的意识，通过创造适当的方式让这种价值获得传播，从而创造了文化价值。

之后，精密器械的制造者出现了，也即经销户外运动商品的商人。他们用无穷无尽的新奇设计和小玩意儿，为美国户外运动的爱好者们提供装备。本来这些设计和玩意儿是要作为自力更生、大胆刚毅、充分的山林野外知识和精湛的射击术等美国精神的辅助品，但反而经常成了它们的替代品。精密器具充斥着人们随身携带的大包小包。但这还不够，但凡脖子上能挂的，腰上能带的，卡车上能载的，拖车上能运的，人们总是不厌其烦。户外运动器具越来越轻便、精细、优良，但是聚少成多，这些器具合在一起，便是一项数量惊人的负荷。对此，人们异常冷静地称之为“野生生物经济价值的代表”。但是，文化价值又从何体现呢？

最后我们再举一个猎鸭者的例子。想想一个猎鸭者坐在一艘钢制的渔船上，躲在一只人造媒鸟的后面。小型汽油发动机可以让他不费吹灰之力就能到达目的地。如果碰到凛冽的寒风，还有罐装的化学燃料可供他取暖。他用一个工厂生产的鸣叫物与飞掠而过的鸭群“说话”，那种鸣叫物可以发出一种极富诱惑力的声音，足以让鸭群“驻足聆听”。那种声音是他从家里的一张电唱机唱片中学来的。即便鸣叫物不起作用，他还有那只合成媒鸟。总之，他肯定能吸引一群鸭过来。同时，他还要眼疾手快，在鸭群开始旋转第二周之前就要开枪。因为沼泽地里有很多像他这样全副武装的猎鸭者，如果他不能赶在前面开枪，就会有人抢占先机。因此，他在距离鸭群还有 70 码的时候就扣动扳机了。他那管猎枪的喉缩多变器被设定在无限远的距离，而且猎枪子弹的广告也告诉他，那堆超级 Z 号子弹，射程非常远，因此他有可能射中。随着子弹射出枪膛，鸭群惊叫着四散开来。一些被射中的鸭掉落下来，然后就会死在某处。在这种情况下，我们能说这位猎鸭者吸取了某种文化价值吗？或者说他纯粹是为了喂水貂？他是在距离鸭群 70 码的时候开枪，临近的狩猎点可能是在 75 码的距离开外射击。那么，其他的猎人还能用什么样的方法猎到鸭子呢？然而，那就是当今的猎鸭方式，是几乎所有的公共猎场和狩猎俱乐部的典型猎鸭方式。那种“一要轻装上阵，二要百发百中”的传统跑到哪里去了呢？

问题实在很棘手，因为提倡美国传统和精神的西奥多·罗斯福并不排斥现代的来复枪；斯图尔特·爱德华·怀特也喜欢使用铝锅、绸缎帐篷和脱水食物。但是，他们都是很适度地使用那些工具，并且将之视为一种辅助品。他们不会沦为工具的奴役。

我不知道怎样才是适度地使用工具，我也不知道器具的正当使用与非正当使用之间的界限和区别。但是，似乎显而易见的是，器具的起源与它们对文化的影响有莫大的关联。家庭手工制作的狩猎或户外生活辅助工具常常可以强化而非破坏人与自然之间的关系，使之变得更加美妙。比如说，用自制的假蝇饵钓到一条鳟鱼，其实是意味着双重的收获，那种快乐，并非仅仅是钓到一条鱼而已。就我个人而言，我用过许多工厂生产的小器具，但是用花钱买来的器具总要有某种限制，超过了这种限制就会破坏运动的文化价值。

当然，并非所有的运动都堕落到了猎鸭那种地步。美国传统精神的捍卫者仍然存在。或许射箭运动和猎鹰训练术的重新兴起便意味着守卫美国传统精神的开始。然而不管怎样，最后的大势所趋将是程度越来越高的机械化，与之如影随形的将是文化价值的萎缩和凋落，尤其是拓荒精神和伦理道德约束的淡化。

我有一种感觉，即美国的户外运动者都很迷茫和彷徨，他们并不明白目前的情势为何。既然更大型的、更优良的器械能促进工业的发展，那为什么就不能便利户外的运动呢？他们也不明白其实户外运动本质上应是返璞归真的，其价值是一种参照价值。过度的机械化会导致工厂离森林或沼泽地越来越近，从而破坏那种参照价值。

没有人告诉户外运动者是什么地方出了差错。关于户外运动的报章杂志已不再是

运动本身的代言人，而是成为户外运动商品经销商花巨资刊登广告的地方。野生生物管理者们只忙于提供人们射击的标靶物，根本无暇顾及和捍卫射击背后的文化价值。因为每个人，从色芬尼到罗斯福，都在说运动具有文化价值，似乎那种文化价值是不朽的。

在不涉及枪支弹药的户外运动中，机械化具有多重的影响。现代化的双筒望远镜、摄影机和鸟的铝制脚环等，当然不可能破坏鸟类学背后的文化价值。另外，除去舷外马达和铝制独木舟，钓鱼的机械化程度也远远低于狩猎。但是话又说回来，机动化的运输工具也破坏了野地的完整和价值，如今只剩下支离破碎的野地供人们去旅行了。

遵循偏远林区的传统，用猎犬来猎狐狸，是机械化局部介入但基本未破坏文化价值传统的典型事例。这算是比较纯正的运动之一，含有真正拓荒精神的味道，也是人类与自然之间关系的完美写照。人们故意射不中狐狸，也表现了人们在道德上的克制。但是我们现在却开着福特轿车来追逐狐狸，狩猎的号角声和汽车的喇叭声交错混杂。然而不管怎样，没有谁能发明一种机械化的猎狐猎犬，没有谁能在猎犬的鼻子上安装一支多管猎枪，也没有谁能通过电唱机或其他的捷径来教别人如何训练狗。总之，在狗的王国里，人们发明各种器具的智慧已山穷水尽了。

其实，把户外休闲运动的所有弊病都归因于户外运动辅助器械的发明是不完全准确的。因为广告商在推销某种产品的时候，总会发挥自己的创意，而创意与实物是有区别的。尽管两者可能都没有什么用处。这里值得特别注意的一点是，“休闲时间哪里去？”栏目。本来，哪里是打猎、钓鱼的好去处，是极具个性化的话题。而关于这方面的知识则完全属于个人的财产。它应该像钓鱼竿、猎狗或猎枪一样，是出于礼貌或情谊可以赠予或租借的东西。然而一旦把它们刊登在娱乐广告专栏上，作为娱乐的指导性信息公开兜售，就是另外一回事了。而如果把它们作为一项免费的“大众服务”，向所有的人提供，显然也是很奇怪的。如今即便是环保部门也会告诉人们，哪里的鱼容易上钩，哪里的鸭子会冒险停下来觅食。

所有这些组织化的功能混淆，基本都是将户外运动中本属于个人的因素非个人化。我不知道正当做法与非正当做法之间的区别在哪里，但是我确信，“休闲时间哪里去？”这项服务已经逾越了正当做法的范围。

如果所推荐的打猎或钓鱼的地方确实是个好去处，那么“休闲时间哪里去？”这

项服务只要能像预期的那样，吸引尽可能多的人就可以了。但是如果并非是打猎或钓鱼的好去处，广告商就要动脑筋想其他的办法了。比如说钓鱼摸彩，在一些孵化饲养出来的鱼身上栓上签条，谁能钓到有中奖号码的鱼，谁就可以领到相应的奖赏。这种奇异的做法使本已濒临枯竭的湖泊又面临着过度垂钓的命运。只有所在地的渔业商会为此感到乐不可支。

职业野生生物管理者们如果认为那些事情与他们无关，只能说他们非常懒惰。产品生产技师和销售员们同属一个公司，他们根本就是一丘之貉。

野生生物管理者们试图在野地里饲养野生生物，通过掌控动物生存的环境来把打猎从一种辛苦的追逐变成一种可以坐享其成的行为。如果这种转变果真能够成功的话，那它将对文化价值产生何种影响呢？我们必须承认，拓荒的情趣与人人都可自由参与的狩猎之间存在着历史性的关联。丹尼尔·布恩连收获农作物的耐心都没有，更别提坐享其成地“收获”野生生物了。也许正统猎人对于“收获”这种观念的格格不入正是他们继承了拓荒精神的一种表达。拓荒精神的内涵之一就是强调自由狩猎，而坐享其成式的“收获”与之是不相容的。

机械化破坏了拓荒的精神和价值，但却没有提供文化价值上的替代品，至少我没有看到。然而，收获或管理却提供了一个替代品，即野地管理。对我来说，这个替代品至少具有同等的价值。管理野地，进而“收获”野生生物就像其他任何一种形式的耕作一样，具有相同的价值。它还是人与自然之间关系的一种体现和反映。此外，野地管理还涉及到道德上的约束。而在没有控制掠食动物的情况下进行野地管理，则需要更高层次的道德约束。因此，我们可以这样说，坐享其成式“收获”猎物虽破坏了拓荒精神，但却激发了另外两种价值。

如果我们把户外运动看做是朝气蓬勃的机械化进程与完全静态的传统价值之间的一种冲突，那么文化价值的前景确实很黯淡。但是，为什么我们对于户外运动的观念不能像机械化的进程那样朝气蓬勃呢？或许，拯救文化价值有赖于积极主动地采取攻势。我感觉这种时机已经成熟，户外运动者们可以为自己决定未来的局势。

举个例子来说，过去10年间，就出现过一种全新的户外运动形式。它既没有破坏野生生物，也没有为现代化的器械所役使，同时还克服了地理环境的局限性，大大提高了单位土地面积对人类的承载量。这项运动没有限制捕猎量，也没有禁猎的季节。它需要的是老师，而不是看守者。它需要一种具备最高文化价值的新型森林知识。而这项运动就是野生生物研究。

野生生物研究起初是专业研究人员的专利。当然，耗时费力而又复杂困难的研究工作无疑要靠专业研究人员。但是，还有许多小问题适合各阶层的业余爱好者去研究。比如在器械发明领域，很早就有业余爱好者涉足。而在生物学领域，人们则刚刚意识到业余研究所具有的娱乐价值。

因此，业余鸟生物学者玛格丽特·莫尔斯·耐思会在她家的后院乐此不疲地研究

北美歌雀，并因此成为鸟生物行为学的世界级权威。那些专职研究鸟生物群落组织的学者在她面前都要自惭形秽。银行家查尔斯·L·布洛利，以研究鹰的种类和行为为乐。他发现了一个迄今为止都没有人知道的事实：有一些鹰冬天的时候在南方筑巢，然后再到北部的森林“度假”。曼尼托巴草原上种植小麦的农场主诺曼和斯图尔特·克里多对他们农场上的动植物群落有着浓厚的兴趣，后来成为动植物群落研究领域的公认权威，从当地的植物学到野生生物的周期循环，几乎是无所不晓，无所不通。此外，在介绍神秘勇猛的美洲狮最好的两本书中，其中一本是由新墨西哥城山上的一个牧牛业者伊利尔特·S·巴克写就的。这些人都是饱含兴趣去工作和研究的。他们认为，最大的乐趣就是研究探索未知事物。

大多数业余爱好者目前所了解的关于鸟类学、哺乳动物学和植物学的知识，比起将来他们可能在那些领域取得的成果来说只是“小儿科”。原因之一就在于生物学教育（包括野生生物教育）的整个体系目标是灌输专业性研究成果，并使其占据垄断地位。对于业余爱好者来说，他们只能进行验证之旅，即验证专家权威早已知道的东西。其实，年轻的业余爱好者们应该意识到，知识之船就在他自己的脑袋里，他是这艘船的船长，可以自由驰骋。

在我看来，提倡进行野生生物研究是摆在野生生物专业管理者面前的一项非常重要的工作。野生生物还有一种价值，它对于整个人类的进步都有潜在的重要影响，只可惜目前只有少数几个生态学家能够了解。

我们现在知道，个体动物对于动物群落的整体行为模式可能无法意识和了解，但它却是构成整体行为模式不可缺少的一环。比如说，兔子不知道食物链是怎么回事，但它却是这个食物链中关键的一环。

我们无法在短时间内、也无法通过个体动物来观察整个群落的行为模式。即便对于一只兔子进行密集而详细的研究，也无益于我们了解整体行为模式的大概。对于群体行为模式概念的了解，需要对一个群体进行长时期的研究。

这就引发了一个令人不安的问题：人类是不是也有一种整体行为模式，而我们对此虽无法意识但却不自主地参与其中，并成为其中的助力之一？暴动和战争、骚乱和革命，是否是人类的几种整体行为模式？

许多历史学家和哲学家都坚持将人类的集体行为诠释为个体意志行为贯彻、汇集后的结果。比如说，外交学就认为，某个政治团体的团体精神取决于其领袖人物的个人特质。而另一方面，一些经济学家认为整个社会就是历史过程中的一个玩物，我们对于整个社会和历史的知识都是后知后觉的。

我们可以合理地认为，我们的社会行为比兔子的群体行为具有更高级的意识和意志内涵。但同时我们也可合理地认为，人类作为生物物种之一，因为我们所处环境的限制，也具有某种我们无法揭示的整体行为模式。即便有一些对于整体行为模式的认识，也有可能是一种曲解或误解。

这种对于人类群体行为基础的存疑，使得人类唯一的相似体——高等动物——具有特别的重要性和价值。厄林顿等人曾指出过这些人类相似体所具有的文化价值。但是几个世纪以来，我们对这座丰富的自然图书馆却不得其门而入。因为我们根本不知道从何处或如何寻找那座自然知识宝库。如今，生态学教导我们从动物的群体行为中寻找人类所面临的相似问题进行研究。通过研究生物群落中一小部分的运作，我们就可以“一管窥豹”，对整个生物群落的运作形成大致的了解。这种“一叶知秋”的深入探索能力以及对于大自然深层奥妙客观的评析，就是未来的森林学知识。

总之，过去野生生物不但曾经养育了我们，而且还塑造了我们的文化。将来野生生物仍旧可以使我们的休闲时光充满乐趣。但是，我们却在试图运用现代化的机械去获得那种乐趣，殊不知这样反而破坏了野生生物的部分价值。只有用现代化的头脑和意识去经营大自然，我们才能在获得乐趣的同时，也获得智慧。

观鹿

8月一个炎热的午后，我悠闲地坐在一棵榆树下面的板凳上，茫然四顾。忽然，我看到一只鹿穿过东边不到半英里的一处小空地。接着我发现在我们农场里有一条鹿踏出来的小径。从小木屋后面的这个角度，任何鹿再经过我都能看得见。

我这才意识到，原来半个小时以前我就已经把板凳从榆树底下搬到了小木屋后面，因为从小木屋后面能清楚地看到鹿及鹿踏出的那条小径。更让人惊奇的是，数年来我都是习惯性地那样去做，而我却一直没有意识到。同时我还想到，如果砍掉一些灌木，我的视野会更开阔，也许会看得更清楚。于是，我忙了一整天，把遮挡视线的灌木都砍掉了。接下来的一个月，我又看到了几只鹿，也许不砍掉灌木，我就看不到它们了。

连续几个周末，我向来访的客人介绍我为了观鹿而砍掉灌木的地方，想看看他们都有什么反应。很快我发现，他们中的大部分对此都无动于衷，看过也就忘了。只有少部分人会像我一样，一有机会就注视鹿可能出现的地方。由此，我得出结论，户外运动者大体可分为四类：猎鹿者、猎鸭者、猎鸟者和非猎人。这种分类与他们的性别、年龄或装备都没有什么关系，它们只代表四种不同的注视习惯。猎鹿者习惯性地注视道路的拐弯处；猎鸭者习惯性地注视天际；猎鸟者习惯性地注视猎狗的动静；而非猎人则什么都不太关注。

当猎鹿人要坐下时，他会坐在能看清前面的地方，后背还要靠在什么东西上；猎鸭者要坐下时，他会坐在能看清上空的地方，而且还要躲在什么东西后面；而非猎人要坐下时，他会哪里舒服就坐哪儿。这三种人从不注视猎狗，只有猎鸟人才会格外留意猎狗。而且不管猎狗在不在他的视线范围内，他总能准确地知道猎狗的去向。可以

说，猎狗的鼻子就像猎鸟人的眼睛。在狩猎季节，我们会发现很多猎人都只是扛着猎枪，他们还不知道猎狗的作用，不知道通过观察猎狗的动静就可以寻获猎物的踪迹。

还有一些经验丰富的户外运动者并不属于上述四种类型。例如，鸟生物学家是靠耳朵寻找目标，眼睛只是用来跟随寻找耳朵所测获的目标。植物学家只是需要在视线所及并能看得清的范围之内靠眼睛来寻找目标。植物学家是发掘植物的天才，但对于鸟类或哺乳动物就有些反应迟钝。同样，森林学者的眼里只有树以及寄生在树上的昆虫和菌类，其他的一切对他而言好像都不存在。而猎人的眼里只有猎物，其他的都无关紧要或毫无价值。

还有一种梦幻似的狩猎方式，我无法将其与上述任何一种形式相提并论。即搜寻动物的粪便、足迹、羽毛、洞穴、窝巢以及它们相互摩擦、殴打、挖掘、觅食、防御与捕食等等被森林居民称之为“迹象解读”的狩猎方式。这种技能是比较罕见的，经常被认为是与书本知识背道而驰的东西。

与解读动物行为迹象相对应的，是对于植物行为迹象的解读。这种技能同样非常罕见，而解读的结果也是“仁者见仁，智者见智”。比如说，一个非洲探险家发现了一棵树上高约 20 英尺的地方有狮子的抓痕，但是他非说那个抓痕是在树很小的时候就形成的。

生态学家被认为是生物学领域的“万事通”，他们尝试着去做上述提到的种种户外行为。不用说，他们不会成功。

大雁的音乐

几年前，这个国家出现的高尔夫球运动被认为是社会生活的一种装饰品，是有钱有闲阶层的一种娱乐消遣。但是很少能引起事务缠身之人的好奇心和兴趣。如今，好多城市开始建立市立高尔夫球场，以向它的市民普及这项运动。

同样的改变也发生在其他大多数的户外运动上 —— 50年前被认为是无聊事物的运动如今都变成了社会生活的必需品。然而让人百思不得其解的是，这种变化才刚刚开始影响到人们对待所有户外运动中最古老、最普遍的两种运动 —— 狩猎和钓鱼

的态度。

当然，我们已经模模糊糊地认识到，对于一个身心俱疲的人来说，去野外散一天心是件很好的事情。我们也已经意识到，对于野生生物的破坏，减少了野地吸引人们前往的诱惑力。但是，我们还不曾学会从社会福祉的角度来看待野生生物的价值。有一些人试图从食用肉的角度，另一些人试图从个人爱好和金钱的角度，还有一些人试图从科学、教育、农业、艺术、公共卫生甚至军队备战的角度来阐释野生生物保护的合理性。只是至今为止，都很少有人能真正明白或清楚表达一个完整的事实，即上述种种，仅是广义上社会价值的构成要素。就像高尔夫球运动一样，野生生物是一笔社会资产。

但是对于那些听到绿头鸭展翅或嘎嘎叫的声音便心神荡漾、热血沸腾的人来说，野生生物别有一番价值。这不仅仅是一种后天培养的品味，而且是一种与生俱来的能从搜寻、追逐猎物中获得愉悦和满足的本能。高尔夫球运动是一项精密复杂的运动，而对狩猎的爱好却基本是一种生理特质。一个人可能不喜欢高尔夫球，但他仍旧是个正常人；但是如果一个人不喜欢观赏、猎获、拍摄或智取鸟类或动物，他就可能被人视为不正常。这样的人已高度文明化了，我也不知道如何同这样的人打交道。给婴儿看一颗高尔夫球，他可能会无动于衷，不过这倒无所谓。但是如果一个男孩第一次看到鹿的时候会无动于衷，我想我肯定不会喜欢这个孩子。由此可知，我们谈论的是人们内心深处与生俱来的东西。有些人在没有机会狩猎或爱好狩猎的本能受到压制时，仍旧可以生活得很好。就像一个人没有工作、娱乐、爱情、事业或其他户外活动时照样可以过活一样。但是在当今社会，剥夺人们爱好狩猎的本能，是种反社会的行为。人们发挥所有正常本能的机会，越来越被视为人们不可剥夺的权利。而破坏野生生物的人正在彻底剥夺人们所享有的那种权利。更为严重的是，他们将一直那样做下去。如果最后一片土地被建成了房屋，我们还可以反悔，可以将其拆除改建成游乐场；但是，如果我们失去了最后一只羚羊，我们将永无反悔的机会，那种损失是无法弥补的。

如果野生动植物是一笔社会资产，那么这笔资产的价值是多少？很显然，对于我们这些骨子里继承了祖上狂热狩猎欲望的人，如果没有野生生物，我们会觉得怅然若失。但这并不能建立起对那笔资产的量化概念。而且在当今时代，人们有时候需要在诸多生活必需品中做出选择。这就需要对各种物品进行价值的量化。比如说，一只大雁的价值是多少？我用一个例子来说明。我有一张交响乐的入场券，价格不便宜，但我觉得钱花得值。然而，为了一睹一只雄雁今天破晓时分是如何鸣叫着扑向我的诱捕场，我会放弃那场音乐会。天气非常寒冷，我四肢都冻僵了，笨手笨脚地没有抓住那只雄雁，但是我仍旧很高兴。因为逮着逮不着雄雁并不重要，重要的是我亲眼看见它了，看见它是怎样从灰暗的西边天际鸣叫着飞过来，我似乎能听到雄雁飞过时风飕飕的响声。我是如此真切地感受到一只雄雁的存在，以致于现在回想起来，我还是难以抑制地激动。我想，大概10张交响乐入场券带给人们那种兴奋的叠加，也不过如此吧。

我的记事本上显示，这个秋天我已经看见了上千只大雁。它们正展开从北极地带到墨西哥湾的史诗之旅，在这期间，每一只大雁都可能曾在某处为人们带来欢乐。这种欢乐与那种花钱买来的欢乐基本是等价的。或许有一群雁曾让一群学童连跑带跳地赶回家，兴奋地向家人描述放学归来的奇遇；或许有一群雁在漆黑的夜晚飞过一座城市，在城市的夜空留下了婉转悠扬的小夜曲，美妙的音乐勾起多少人的回忆、希望和探究的渴望？也或许有一群雁曾让农夫们停下手中的活儿，想像着远方的土地和人民，想像着雁群跋山涉水的旅程，而此前，农夫们只是“面朝黄土背朝天”，日复一日地辛苦劳作，没有什么东西可以激发他们的想像。总之，我相信那上千只大雁可以让人们不用太多的花费，就能享受莫大的愉悦。钱的价值只是一种交换价值，就像一幅画的售价或一首诗的版权。但是，替代价值又是什么呢？假设世界上不再有画、诗歌或雁的音乐，情形又会怎样呢？这是一个令人头疼的问题，但我们必须对此做出回答。如果有迫切的需要，也许会有人重新创作一部《伊利亚特》，或是重新画一幅“三钟经”。但是有谁能制造一只大雁？“我，耶和华，将应允他们。这是上帝的手所制造，是以色列的至圣者所创造。”

用同样的标准来衡量雁的音乐与艺术的价值是否有失虔诚和亵渎艺术的神圣？我想不会的。因为真正的猎人其实也是一位艺术家，只是比较缺乏创造力而已。试想，是谁在法国洞穴中的兽骨上画下了第一幅画？是猎人。是谁在现代化的生活中为了自然界的美好而怦然心动，并且宁愿遭受饥渴和寒冷也要大饱眼福一番？也是猎人。我们再想想，是谁写下了歌颂伟大猎人的诗篇，是谁描绘了奇妙的风、冰雹、雪、星星、闪电、乌云、狮子、鹿、野山羊、大乌鸦、鹰隼、大雕，又是谁写下了关于马的颂词？是约伯——有史以来最伟大的剧作家之一。诗人颂扬、猎人爬山，风马牛不相及的两种事物，其实都为着一个共同的目的——追求美的悸动。评论家著述、猎人智取猎物，也是为着共同的一个目的——将美的事物据为己有。两者的区别主要是程度、意识和语言上的，其中语言是区分人类活动的最狡猾的仲裁者。因此，如果离开了大雁的音乐，我们照样可以生活的话，那么离开了星星、日落或《伊利亚特》，我们也照样可以生活。但问题是，如果我们愿意舍弃上述任何一种事物，我们都会是傻瓜。

那么，从道德和宗教的角度来看，野生生物又具备什么价值呢?我曾听说过一个男孩，自小接受无神论的教育，长大后成了一名无神论者。但后来他改变了自己的信仰，成为上帝的虔诚信徒。因为他看到世界上竟然有上百种刺嘴莺亚科的鸟，每一种都装点得像彩虹那般绚丽，每一种都要年复一年地展开数千英里的迁徙之旅，而科学家们虽然能准确地记述这些现象，但却无法理解其中的奥妙。数百万年中随意运作的大自然力量的偶然汇合，无法解释刺嘴莺为什么会那么美。任何机械论学说，哪怕有基因突变的理论撑腰，也无法解释刺嘴莺为什么有一种会是天蓝色、画眉鸟为什么会进行晚祷、大雁的歌曲为什么那么婉转悠扬。我敢说，那位男孩由此建立的对于上帝的信仰将比任何一位神学研究者的信仰都要坚定。以后还会有更多的男孩像以赛亚那

样，“可以看见、了解、思考，可以懂得是上帝那双伟大的手把这一切美妙地结合在了一起。”但我担心的是，让他们去哪里看、去哪里思考？是历史博物馆吗？

比起其他的户外运动来说，狩猎和钓鱼对于人的品格有什么特殊的影响呢？我在前文已经指出，狩猎与钓鱼的欲望是深植于人的内心的，其来源既关乎内在的本能，又关乎与外界的竞争。鲁宾逊·克鲁索的一个儿子从来没有见过网球拍，但是他没有网球拍也能很好地生活。然而不管有没有人教他，他肯定会狩猎或钓鱼。就主观利益而言，这并不能说明狩猎或钓鱼更具优越性。那么，究竟哪一点更有助于人格的形成呢？这个问题就像我们过去常常辩论的究竟是男孩还是女孩是学校的好学生一样，一直辩论到世界末日，都不会辩论出结果。这样毫无意义的辩论，我不会参与其中。但是，关于狩猎有两点值得格外强调一下：第一，户外运动的道德规范不是一成不变的，必须由个体加以确定并进行实践，除了上帝之外，没有人做其行为的监督者和仲裁者；第二，狩猎一般需要对于猎狗和马的娴熟操纵，而缺乏这样的经验正是以汽油为动力的现代文明最严重的缺陷之一。古时候有一种说法，即不懂得驾驭猎狗和马匹的人不是真正的绅士，看来有一定的道理。在西方国家，滥用马匹一直为众人所不齿。早在“性格分析学”诞生之前，这个单凭经验制定的性格鉴定方法就已经在饲养牛的地区广为采用。而且据我们所知，这种方法比“性格分析学”更经得住考验。

然而，证明一个东西比另一个东西更好，毕竟不是一项明智之举。重要的是，大约有 600 万到 800 万美国人喜欢狩猎或钓鱼，而且对于那种爱好的狂热是这个人种所特有的。美国人受益于任何促使他们到野外的“诱因”，但同时也由于种种“诱因”的被破坏而受到伤害。因此，如何阻止“诱因”被继续破坏就成为一个社会议题。

结论：我对于狩猎有种天生的狂热，我还有三个儿子。小时侯，他们经常跟我的鸟媒玩，要么就是拿着木制手枪在空地上玩游戏。我希望他们能拥有良好的健康和教育，如果可能的话，还希望他们每人都拥有一项技能。但是，或许以后他们不知该如何处理和运用他们所拥有的健康、教育和技能。因为那时山丘上可能不再有鹿；树丛中可能不再有鹌鹑；草原上可能不再有鹬的鸣叫；当黑暗笼罩沼泽地时，他们可能再也听不到野鸭的尖叫声和水鸭的嘎嘎声；当晨星在东方的天际隐退时，他们可能再也无法听到迅速挥动的翅膀在空中飕飕作响。而当黄昏的微风在古老的棉白杨树林中吹拂，夕阳从横跨一条古老河流的山丘上缓缓流泻，温柔地笼罩在宽广的棕色沙洲上时，没有大雁的音乐做伴奏，他们又该做何感想和反应呢？

第四部分 结局

土地伦理

当神一般的奥德修斯于特洛伊战争结束重返家园后，便用一条绳子将他的12个女奴全部吊死，因为他怀疑这些女奴在他离家期间有越轨行为。

在当时那个时代，奥德修斯的行为没有触犯法律，因为那些女奴是他的私人财产。对于私人财产的处理没有对与错的评判。

其实，在奥德修斯主领希腊的那个时代，并非没有是非对错的概念。看看奥德修斯所率领的那艘黑色船首的军舰在暗红如酒的大海中破浪前进，终于归返家园之前的那段漫长岁月，他的妻子所表现出来的坚贞，你就可以明白。当时的伦理架构涵盖了对于妻子的要求，但却没有延伸至对于奴隶的规范。此后的 3000 年间，伦理道德标准扩展到许多行为规范领域，相应的，以自身利益为准绳的评判标准日渐萎缩。

伦理的演进

事实上，目前为止只有哲学家进行过研究的伦理道德的扩张，是生态进化的一个过程。除了哲学的角度，我们还可以从生态学的角度，来描述这个过程的演进。就生态学而言，伦理道德是对为生存而奋斗诸种行为自由的限制；就哲学而言，伦理道德是区分社会行为与反社会行为的标准。其实这两种角度是一个事物的两个方面。这种事物起源于相互依赖的个体或团体所发展出来的合作模式的趋势。生态学家称之为“共生现象”。政治与经济就是一对高级的共生体，在这对共生体中，原先大家可自由参加的竞争如今已有一部分被具有伦理内涵的合作机制所取代。

随着人口密度的增长和工具效能的提高，合作机制的复杂性也与日俱增。例如，在乳齿象时代，我们很容易定义木棍与石头是否作为反社会的一种手段。但是在机动车时代，我们则很难辨别子弹与广告牌是否具有反社会性。

最早的伦理规范主要是处理人与人之间的关系。“摩西十诫”就是一个例子。后来增加的伦理规范开始处理个人与社会之间的关系。以“己所不欲，勿施于人；己所欲，施与人”的信念试图将个人融入整个社会。而民主政治则试图将所有的社会组织转变为个人公平自由发挥的舞台。

然而迄今为止尚未有规范人与土地、人与动植物之间关系的伦理道德。在人们的观念中，土地就像奥德修斯的女奴那样，只是一种财产。人与土地之间的关系仍旧是纯粹经济性的，人们只想着要享受权利，忘记还要承担责任和义务。

如果我对于种种迹象的解读是正确的，那么，人们将伦理道德规范延伸至人类生存环境的领域，则是进化上的可能性与生态上的必然性共同催生的结果。这是一系列步骤中的第三步，前两个步骤都已经实行了。以西结和以赛亚之后的一些思想家们都认为，对于土地的掠夺不仅是不明智的，而且是错误的。然而遗憾的是，整个社会还没有完全接受这种看法。不过，目前兴起的自然资源保护运动可看作社会接受那种看法的萌芽和开端。

伦理道德可以被视为引导人们面对生态情势演变的模式，这种模式是如此的新颖、复杂，有时反应还有些滞后，以致于社会大众并不能察觉社会对于这种模式的引导。大多数情况下，人们是靠着本能来行事的。而伦理道德很有可能就是社群本能的一种。

社群概念

至今为止，所有伦理道德的发展都建立在一个前提之上：个人是社群的一员，而社群的各成员之间是相互依赖的。个体的本能促使他在社群中为了自己的地位而竞争；但个体的伦理道德又促使他与社群中的其他个体保持合作。（也许过样才有竞争的目标。）

关于土地的伦理只是扩展了社群的内涵和外延，使之包括土壤、水源、植物和动物。我们可将这些东西统称为土地。

这听起来似乎很简单，但是，我们是否真的发自内心地歌唱我们的土地和家园，并为之承担一定的责任和义务？你可以说你歌唱了，也可以说承担责任和义务了。但歌咏及保护的对象肯定不是土壤，因为我们让土壤狼狈不堪地流失到下游；也肯定不是河流、湖泊和大海，因为我们觉得它们除了能带动涡轮机、载运油轮、冲走垃圾以外别无用处；也肯定不是植物，因为我们已神态自若地灭绝了大部分植物群落；当然也不会是动物，因为我们已消灭了很多最大、最美丽的物种。关于土地的伦理当然无

法阻止对于上述种种“资源”的改造、管理和利用，但是，它却能够提醒人们，这些“资源”也有其继续存在的权利，尤其是在自然状态下继续存在的权利。

总之，关于土地的伦理改变了人类作为土地征服者的角色，成为包括土地在内的广义社群中的普通成员和公民。这就暗示着每一个成员既要尊重其他成员，也要尊重社群的其他组成部分。

从人类历史上我们可以发现，大多数征服者最终都要落得失败的下场。为什么呢？因为“征服者”这一角色本身就暗含着征服者以个人的意志决定社群的运转，哪些东西、哪些人是有价值的，哪些东西、哪些人是没有用的，包括整个社群的一切，都是征服者一人说了算。但结果往往表明，征服者对于社群就像一个白痴，所知寥寥。这也就是为什么他们总要失败的原因。

在生物群落里也存在着类似的情况。亚伯拉罕不容质疑地认为：土地为什么存在，就是为了让他能享受牛奶和蜂蜜的甜美。而现在，我们的教育程度愈高，就愈会质疑亚伯拉罕的想法。

现在的普通民众都理所当然地认为，科学家应该懂得社群运转的机理。但是科学家们却清醒地知道自己很难担此大任。他们知道生物群落的机制非常复杂，其运转规律也许永远无法完全揭示。

如果从生态学的角度来诠释历史，我们会发现，人类实际上只是生物群落中的一员。许多至今为止仍是仅从人类活动角度来阐释的历史事件，实际上是人类与其赖以生存的土地之间互动的结果。土地的特质与人类的特质对于历史事件具有同等重要的影响。

我们以密西西比河流域的拓殖为例来说明。在美国独立战争之后的那几年里，有三批人试图夺取密西西比河流域的控制权，即土著印第安人、英法两国的商人和美国殖民者。历史学家们在猜想，当初底特律的英国人如果能给土著印第安人多一点协助的话，结局将会是怎样。因为当初争战的结果直接决定了大量殖民者涌入肯塔基州之后，这片昔日的甘蔗园将变成什么样子。现在让我们思考这样一个事实：当殖民者用牛、犁、火和斧头使那片甘蔗园变成了蓝草地之后，在上述种种力量的冲击下，那片肥沃的土地再也经不住折腾，如果展示给我们的是一堆堆无用的杂草或灌木时，我们该怎么办？在这种情况下，布恩和肯顿是否还能支撑下去？人们会不会因此而涌入俄亥俄、印第安那、伊利诺和密苏里等州？美国政府是否会向法国买下路易斯安那州？是否会有另一个横贯大陆的新联邦出现？南北战争是否还会发生？

在历史的长河中，肯塔基州只是一个微不足道的句点。通常情况下，我们只知道人类在历史这个剧本中试图做些什么，但我们不知道人类种种行为的成功与否很大程度上取决于土地对于人类所施加的各种力量的反应。在关于肯塔基州的那个例子中，我们甚至都不知道蓝草到底是怎么来的，是土生土长的植物还是从欧洲“偷渡”而来？

西南部的拓荒者与肯塔基州的殖民者一样勇敢、聪明、坚韧。但让我们充当一回“事后诸葛亮”，看看西南部的拓荒史与肯塔基州的发展史有何区别。在西南部地区，人们的垦殖没有带来蓝草，或其他能经得起人们滥加垦殖压力的植物。相反，过度放牧的结果，使这个地区变成了杂草、灌木丛生的荒漠地带。整个生态平衡全被打乱了。每有一种植物消逝，总会让土地多一份贫瘠。而土地每多一份贫瘠，植物物种就多一份消逝的危险。以致于今日的结果，不单单是植物与土壤，而且包括动物群落在内，都形成了一种恶性的循环。早期的拓荒者们无法意识到这一点，那时在新墨西哥州的沼泽地上，甚至还有人挖排水沟来加速那种恶性循环。当然，他们是毫无意识的，因为土壤恶质化的过程是那么的微妙，以至于没有多少人能感受到它。而外地来的游客就更无从知晓了，他们甚至还赞叹这片土地风景的迷人和美好。（殊不知，这片土地与 1848 年的时候相比，简直是天壤之别。）

在这中间，西南部地区还经历过一次开发，但结果大相径庭。那是在哥伦布之前的时代，普埃布洛印地安人部落曾在西南部地区移居。他们不属于游牧民族，后来他们的文明消失了，但却不是因为他们曾寄居的土地衰竭的缘故。

在印度，人们曾在寸草不生的地区拓居，而且显然没有破坏土地。因为他们是从别处割草喂牛，而不是放任牛自己去啃噬。（我不知道这仅仅是好运气，还是人们的智慧起了作用。）

总之，植物物种的交替演进引导着历史发展的方向。拓荒者只是这种历史发展的载体和表现形式而已。因为不管怎样，物种如何交替取决于这片土地。我们应本着这样的精神学习历史。而且，土地作为社群一部分的概念终有一天会深入人心。

沙郡年记 生态良心

自然资源保护的目的是要实现人类与土地之间的和谐共存。但尽管历经长达一个世纪之久的宣传，人们在自然资源保护方面取得的成果还是微乎其微，而且大多是停留在空洞的口号和演讲稿的宣示上。在偏远的地区，我们更是“进一步退两步”地透支着大自然的财富。

对于这样的困境，人们最常诉诸的解决之道是“加大自然资源保护教育的力度”。对于这一点，没有人会质疑。但是，仅仅加大教育的力度就够了吗？是不是在教育的深度上应有所加强、内容上应有所扩展？

我们很难简洁而恰当地概述自然资源保护教育的内容。但是按照我的理解，其内容大体上应是：遵守法律、选贤与能、参与某些组织和根据本地情况实施相应的资源保护措施，而剩下的事情就由政府来处理。

这种概括是否过于简单，以致于不可能取得任何有意义的结果呢？它没有界定对与错、没有规定责任和义务、没有提倡奉献与牺牲、也没有暗示当前哲学价值观是否

该有所改变。就土地的使用而言，它只是鼓励开明的利己主义。那么，这种教育究竟能带给我们什么呢？下面这个例子可为我们提供部分答案。

到了1930年，除了生态学方面的盲目无知者之外，几乎所有的人都可看出，威斯康辛州西南部的表土层正在向大海里流失。1933年的时候，农人们被告知，如果他们愿意连续五年采取某种补救措施，社会大众就可以派遣地方资源养护队的劳力去帮助他们将那些措施付诸实施，并且还会为他们提供必要的机器和设备。农人们欣然接受了这样的建议和援助。但是五年合同期满的时候，农人们便把那些补救措施完全抛在脑后了。以往的耕作习惯又卷土重来，因为它们能给这些农人带来最直接的经济利益。

这就使人们想到，如果让农人们自己制定自然资源保护措施的话，或许他们能将之变为自觉的行动。于是，1937年威斯康辛州议会通过了《土壤保护地区法令》，内容其实是针对农人们所说的：如果你们能够自己订立合理使用土地的规章制度，社会公众将为你们提供免费的技术服务及廉价出租专业设备；每个郡县都可制定自己的规章制度；所有的规章制度都具有法律效力。《土壤保护地区法令》刚一出台，几乎所有的郡县都纷纷组织起来，准备接受这种援助和服务。然而，10年过去了，没有一个郡县按照要求制定本地区合理使用土地的规章制度。我们只能看到在带状耕作、牧场翻新、在土壤上撒石灰以控制土地酸度等方面有明显的改善，但是没有哪个郡县会想到在林子周围围上篱笆防止牛羊啃噬，也没有哪个郡县会想到禁止在山坡上耕作或放牧。总之，农人们只是选择那些能给他们带来明显而又直接利益的保护措施，对于那些能造福整个郡县，但并不能给个人带来明显收益的措施，农人们是没有多大兴趣的。

当你问起为什么大家都不制定相关的规章制度时，你会被告知大家还没有自觉遵从那些规章制度的意识和心理，需要对人们进行教育。但实际上现行的教育并没有提及人们在使用土地时应尽的责任和义务，并没有跳脱利己主义的框架。因此最后的结果是，我们所受的教育一点没有减少，而肥沃的土壤和茂密的森林却越来越少、洪涝灾害却连年增多。

这种局面令人困惑的地方还在于，当讨论起乡村道路、学校、教堂和棒球队的改善时，那种超脱了利己主义形式的所谓责任和义务的存在被视作理所当然。然而在改善流水侵蚀土壤、维护农场地景地貌的优美和多样性方面，人们所应承担的责任和义

务却没有被凸显。关于合理使用土地的伦理道德就像一个世纪之前的社会伦理道德一样，完全是被经济上的利己主义所驱动。

总之，我们建议农夫在耕作时“举手之劳”地保护一下自己的土壤，他们做了，而且的确只是在“举手之劳”的情况下。如果一个农夫砍掉了山坡上75%的树林，以便让他的羊群畅通无阻地吃草；或者任由岩石、土壤混同雨水一起流入大海，他仍旧可以被看作社会上值得尊重的一员（如果在其他方面表现得体的话）。如果他往自己的地里撒石灰控制土壤的酸度或者沿着崎岖的地势耕作以限制地表土流失，他也有资格享受一切可以享受的权利，同时还可以从当地的土壤保护部门领取薪水。原本这个地区风景优美、生态秩序井然，但是现在却水土流失、运转失调。其原因就在于我们过于急功近利，没有向农夫们讲清楚他们所应承担义务和责任的重要性。未经良心发现的责任和义务是不能转化为切实有效的行动的。我们亟待解决的问题就是如何把社会道德的良知扩展到土壤保护的领域。

我们知道，如果在知识观念上、信仰忠诚度上、个人喜好程度上以及对某物的信念上没有出自人们内心的反省和变化，那么，道德领域中的任何一场变革都无法取得成功。土壤保护至今仍是口号大于行动，其原因就在于土壤保护的观念尚未深植于人们的哲学观念和宗教意识当中。我们只是尝试着让自然资源保护的工作“便捷化”，没想到弄巧成拙，让一件关乎国计民生的事在人们看来却无足轻重。

土地伦理道德的替代品

当历史的逻辑需要我们提供面包时，我们却拿出了石头，并且使出浑身解数来说明这块石头看起来如何像面包。下面我就为大家介绍一些这样的“石头”，看看它们是如何充当土地伦理道德的替代品的。

完全以经济利益为驱动的自然资源保护系统的一个最基本的弱点，就是认为该生态系统中的大部分都没有经济价值。野花与燕雀就是这方面的例子。在威斯康辛州的大约2.2万种高级动植物中，人们认为有不到5%的部分可以出售、饲养、食用或用作其他经济性的用途。然而，这些动植物都是整个生物群落的有机组成部分。如果说整个生物群落的稳定性依赖于它的完整性，那么，不管这些动植物有没有经济价值，它们都有继续存在下去的理由。

如果有一种没有经济价值的物种濒临灭绝，而恰巧我们又比较喜欢这个物种，那么，我们就会想出某种托词，将经济上的所谓价值强加于它。本世纪初的时候，燕雀差一点就要被灭绝了，是鸟类学家在危机关头拯救了燕雀。鸟类学家提出了一些经不住推敲的理由，大概是说如果没有燕雀为我们捕捉昆虫，昆虫就要灭掉人类云云。为了使理由勉强占得住脚，还要给它罩上带有经济色彩的光环。

如今再想起当初为了保护燕雀而编造的托词，心里很不是滋味。虽然至今我们还

没有建立起土地伦理道德的构架，不过值得欣慰的是，我们至少在对待鸟类的态度上已开始接近正确的做法，即不管这种鸟有没有经济价值，作为生态系统的一个组成部分，它的存在没有谁可以剥夺。

就食肉哺乳动物、猛禽和以鱼为食的鸟类而言，也存在着类似的情况。生物学家曾一度声言，上述这些生物有其存在的必要性，因为它们演绎着弱肉强食、适者生存的自然法则，从而使猎物个个“身体强健”；它们还能帮助农夫控制像鼠、大家鼠、松鼠或狸之类的啮齿动物对于农作物的破坏；而且它们只捕食那些毫无用处的物种。为了使它们存在的理由站得住脚，同样是将其与经济用途牵强附会在一起。直到最近几年，我们才能听到一些客观公正的评论。即所有的掠食动物都是生物群落的一个组成部分，没有任何团体或个人能够以真实的或想像的理由来剥夺任何一个物种生存的权利。然而不幸的是，这种开明的论断仅停留在口头宣示的阶段。在很多地区，猎杀掠食动物的运动还在如火如荼地开展。比如说，经国会、自然资源保护部门和许多州议会授权的捕杀北美大灰狼的运动，已使大灰狼濒临灭绝的险境。

有一些植物物种因为生长过于缓慢，或者是作为木材原料的经济价值极低，已被那些经济利益至上的林务官们开除出局。北美香柏、美洲落叶松、柏树、山毛榉和铁杉等就属于这样的植物。就林业生态学的发展而言，欧洲是首屈一指的。在那里，没有商业价值的物种仍被视作当地森林群落的成员而被保存下来。而且他们还发现一些植物比如说山毛榉在增加土壤肥力方面有不可替代的价值。此外，他们还认为，森林与构成森林的林木物种、地表植物群落和动物群落之间相互依存的关系是客观存在并且理所当然的。

有时候，缺乏经济价值不但是某个物种或某个群体的特征，而且是整个生物群落的特征。例如沼泽、泥沼、沙丘或沙漠地带。遇到这样的情况，我们通常是把它们的自然资源保护工作交由政府去处理。但困难在于，这些地区通常只是散布于有经济利用价值的私人所有的土地之间，政府不可能完全占有或控制这些零散的地带。因此而导致一些沼泽、沙丘或沙漠被周围更大地区的湮没。但是如果那些土地私有者们有生态眼光和意识的话，他们会很愿意充当沼泽、沙丘或沙漠的管理员，将它们视作自己的农场或社区的一个有机组成部分，认为正是它们增加了这个地区生态的多样性和美好地景。

在一些情况下，我们认为某些地区没有经济利用价值的假定会被证明是错误的，但往往是在失去以后才懂得珍惜。一个现成的例子就是人们在排干了麝香鼠沼泽地的水之后，现在反而又重新往里蓄水。

美国的自然资源保护有一个明显的特点，即把所有私人土地所有者无法完成的工作都交由政府来处理。于是，政府所有、政府运作、政府补贴或政府管理开始风行于林业、牧场、土壤及河流流域、公园和野地、渔业以及候鸟等许多领域，将来还会扩展到更多的地方。政府参与自然资源保护角色地位的提高是合情合理的，在有些地方

还是不可或缺的。对此，我不持异议，因为我本人就倾注大半生的精力致力于政府环保工作。然而，其中的问题的确是层出不穷：政府环保工作的重要性和必要性在哪里？政府的课税收入能弥补纷繁复杂的环保开支吗？政府环保工作的临界点在哪里，即什么时候会像乳齿象那样，因机构臃肿而人浮于事、陷于瘫痪？如果答案存在的话，我想应该寓于土地伦理道德的建构上，或者其他能够将更多的责任和义务赋予私人土地所有者的力量上。

工业用地的所有者和使用者们，尤其是木材商和畜牧业者，常常因为政府土地使用权及管理权的扩展而抱怨连连。然而，他们却对最便捷可行的应对措施——主动地合理规划私人土地的使用和保护，做到可持续性发展——熟视无睹。

当我们要求私人土地所有者们为了大家的利益而做一些无利可图的事情时，他们可能会耸耸肩膀，表示有心无力。如果那些要求会让他们付出金钱的代价，倒还有情可原；但是如果那些要求只需要他们具备前瞻的眼光或开放的头脑或者仅仅是时间的话，他们就至少应该考虑一下。近年来，划拨给土地使用及保护的款项和津贴成几何基数增长，但大部分都被敛集到政府本身的各个机构用做进行环保知识的教育，比如说土地管理局、农业大学和它们的分支机构。但据我了解，这些机构根本没有将土地的保护作为一项伦理道德和责任来进行灌输和教育。

总之，纯粹建立在经济利益和利己主义基础上的自然资源保护工作系统是徒劳无功的。对于绝大多数的缺乏经济和商业价值的生物物种来说，目前的这种资源保护观念倾向于无视它们的存在，直至把它们完全灭绝。而现在我们知道，这些看似缺乏经济和商业价值的生物物种，实际上对于整个生物群落的健康运作来说是必不可少的。那种想当然地认为自然界摒除那些毫无经济价值的物种才能有效运转的想法是荒谬的；那种认为自然资源保护工作理应由政府承担的想法也是错误的。因为自然资源保护工作太繁多、太复杂、太分散，单靠政府的力量，而非靠众人的觉悟，是难以获得成效的。

只有在民众及土地私有者中间建立起土地伦理道德的觉悟和自觉，才是唯一的解决问题之道。

土地金字塔

想拥有可补性强和指引人类与土地之间经济关系的伦理道德，需要有一个前提，即要建立起土地是一个生态有机体的意识观念。某种东西只有我们可以感知、触摸、理解、热爱或是信任的时候，我们与之建立的关系才能融入道德的因素。

在自然资源保护教育中，最常使用的概念就是“自然的平衡”。但是这个概念无法准确地表达我们对于土地有机体的知之甚少。原因太冗杂，这里就不再赘述。我认为比较准确的概念应是生态学上的一个术语：生态金字塔。这里我想首先把金字塔作

为土地的一个象征，然后再从土地的使用方面来揭示它的一些涵义。

植物利用光合作用从太阳中汲取能量，之后这种能量便在生物群落中开始了循环。我们可以将生物群落比作有很多层的金字塔。金字塔的最底层是土壤，土壤上生长着植物，植物上寄生着昆虫，昆虫之上是鸟类和啮齿动物，再往上经过不同的动物层直到金字塔的最顶端——大型的食肉动物层。

每一层的物种，其分类标准并不在于它们来源相同，或者外貌相似，而在于它们的食物相同。每一层物种都以它下面一层的物种为食或以其为生，而它们同时也是上一层物种的食物或生存条件。金字塔越往上走，物种的数量就越少。因此，每一种食肉动物都有成百上千的猎物，而它们的猎物又以成千上万的昆虫为食物，昆虫又以难以计数的植物为生。生物群落的金字塔结构就反映了这种从顶端到底层无数多层的自然生态。与熊、浣熊和松鼠一样，人类也是既吃肉又吃蔬菜，同属于中间层。

不同层级物种之间的这种互为食物及生存条件的关系状态，我们称之为食物链。以前最常见的食物链是土壤——橡树——鹿——印第安人，现在逐步被土壤——玉米——牛——农夫这样一条食物链所取代。每一个物种，包括我们人类自己，都是众多食物链中的一个环节。除了橡树以外，还有上百种植物也都是鹿的食物；同样除了玉米，牛也可以以其他上百种植物为食。因此，鹿和牛都是上百种食物链中的一环。由此推广开来，整个金字塔便是由数不清的食物链组成的，同时由于它过于庞大复杂，表面看来似乎是杂乱无章的，但实际上，整个金字塔系统是一个高度组织化的体系，那种基于各个组成部分之间既合作又竞争的运转态势非常稳定。

在最初的时候，生命金字塔又矮又扁，食物链短小且简单。在生物进化的作用下，生命金字塔的层级越来越多，食物链也越来越复杂。在增加了生命金字塔“高度”和复杂性的数千个物种中，人类是其中之一。科学带给我们很多困惑，但至少有一点却是毫无疑问的，即生物进化的趋势在于增加生物群落的复杂性和多样性。

从生命金字塔的角度来看土地，它就不再纯粹是土地，而是能量的源泉。这种能量流经土壤、植物和动物，形成永无休止的循环。食物链便是引导能量不断向上层生物形态流动的“活管道”，而死亡和腐朽是将能量回归土壤的一种形式。另外，能量的循环不是闭合的，而是开放的。在循环的过程中，有的能量在腐败中消散了，有的能量从空气中获得了“援助”而得到加强，有的能量储存在土壤、泥炭和生命持久的森林里。同时，能量的循环还是永续不断的，就像缓慢增长的生命周转金。雨水的冲刷会导致部分能量的丧失，但通常丧失的量很少，而且会与岩石腐朽后增加的能量相抵消。流失的能量被储存在大海中，经过漫长的地质岁月的演进，会形成新的土地和新的生命金字塔。

能量循环流动的速度和特质取决于动植物群落结构的复杂性，就像树液在大树体内的循环流动取决于大树细胞组织的复杂性一样。如果没有这种复杂性的存在，正常的循环一般不会发生。所谓结构，即意味着各个物种成分的特定数目、特定种类和特

定作用。土地的复杂结构与以土地为核心的能量循环系统的顺利运转之间的相互依赖关系，是土地的基本属性之一。

能量循环系统中的一部分发生变化时，系统中的其他部分就要调整自身以适应这种变化。这种变化并不一定会阻碍或逆转能量循环的方向。实际上，生物进化本身就是一系列自我诱发式变化的长期累积。只是那些变化会增加能量循环的复杂性和长期性而已。同时，那些变化通常进行得很缓慢，并且被局限在一定范围之内。但随着人类文明的进步，各种各样的工具使人类成为那些变化的“帮凶”，使其能以前所未有的广度、深度和强度进行变化。

其中的变化之一是植物群落和动物群落组成成分的变化。大型的哺乳动物逐渐从金字塔的顶端消失，食物链有史以来第一次变得简单短小。驯化的外来物种取代了野生物种，野生物种只得另觅栖息地。在这场世界范围的动植物群落的“纵横捭阖”中，一些物种因“逾越分际”被当作害虫或疾病，其他的则因各种各样的原因被灭绝。而这样的结局很少有人能够预测得到，也是人们不愿看到的。它们代表了能量循环系统中无法预测也无迹可寻的重新调整。农业科学在很大程度上是出现的新害虫与控制新害虫的新手段之间的一场竞赛。

另外一种变化涉及从植物到动物再回归土壤的能量流动。土壤的肥力是指土壤吸收、储存和释放能量的能力。农业的发展，如果一味透支土壤的肥力，或者过度地用驯养的物种代替土生土长的物种，就可能导致能量流动秩序的混乱，或者导致储存能量的减少。土壤所贮存能量的流失或者是寄生其上的有机物的流失，如果到了入不敷出的程度，就是所谓的土壤侵蚀。

水和土壤一样，也是能量循环的一部分。工业的发展不可避免地带来了水资源的污染，拦坝蓄水也改变了水流的自然形态，这一切都有可能导致失去维持能量循环所必需的动植物。

交通运输工具的改进也带来了另外一种基本的变化：在一个地区生长的动植物现在可以在另一个地区消费，并完成融入土壤的回归。运输工具还可以汲取贮存在一个地区岩石、空气中的能量，到其他地区消费。同样，海鸟从赤道另一端大海中鱼身上提取的氮元素，也可用做我们在赤道这边花园里的肥料。总之，以前有地域局限性和

独立性的能量循环，现在得以整合形成全球范围的规模。

生命金字塔在人类介入而导致改变的过程中，会释放储存的能量。而这通常会造成动植物（包括野生的和驯养的）欣欣向荣、生命力旺盛的假象，尤其是在拓荒时期。同时，它还会暂时掩盖或推迟大自然对人类行为的惩罚。

上述内容只是对以土地为核心的能量循环做了一个简要介绍，其主要内容不外乎以下三点：

1.“土地”是个蕴涵丰富的概念，不仅仅指土壤。

2．某处原有的动植物能使当地的能量循环生生不息。外来的动植物就不一定能做到。

3．人类活动对自然能量循环造成的变化与生物进化过程本身固有的变化，性质是不同的。而前者对自然能量循环的影响更为复杂，常常超乎人们的预期。

上述三点共同引发了两个最基本的问题：土地能调整自身以适应人类行为带来的种种变化吗？人类对于大自然的改造能不能诉诸较为缓和的方式？

不同的生物群落在承受人类行为带来的剧变时，能力似乎各有不同。举个例子来说，西欧的能量金字塔与凯撒当年发现的“那座”能量金字塔就有很大的不同。一些大型的动物消失了，多林泽的森林被改造成草地或耕地，引进了许多外来的动植物，遗留下来的“土著”动植物在分布和数量上也有很大的改变。然而，那里的土壤并没有太大的流失，反而因外来生物的补充而保持了肥力，流水也照样正常地流淌着。看来，这里的“金字塔”结构的变化并没带来能量循环秩序的紊乱。

由此我们可以断定，西欧的生物群落具有较强的抗压性和适应性，其内在的运转秩序强健而富有弹性。不管外界的变化有多么激烈，它总能调整出某种可以适应这种变化的权宜方式，从而使自身依然能够适合人类和大多数本土生物的居住和生存。

日本的生物群落一定程度上是西欧生物群落的翻版，历经剧烈的变动仍然能保持生态秩序的井然有序。

但是，世界上大多数的文明地区和一些尚未开化的地区，其生物群落在外界的作用下，都会在不同程度上表现出一些紊乱和不良适应症，从最初的“小症状”到恶性耗损不一而足。在小亚细亚和北非，这些症状与气候的变化交相混杂，搞不清气候变化与恶性耗损之间，孰为因孰为果。在美国，生态系统功能紊乱的程度因地区而异。情形最严重的地区是西南部、奥扎克山脉以及南部的部分地区。情形最轻微的地区是新英格兰和西北部。在欠发达地区，如果能够合理使用土地，一定程度上是可以缓解那种失调和紊乱的。因此在墨西哥、南美洲、南非和澳大利亚的部分地区，虽然正在经历剧烈而且仍在升级的耗损，但我无法预测前景。

这种几乎是全球性的土地生态机能紊乱的现象，就像一个动物生了病一样，只是不会像动物那样到最后彻底崩溃或死亡而已。因为土地会慢慢自我修复，只是修复后土地机能的复杂性会降低，同时对于人类、动植物的承载能力也会有所下降。目前，

有很多被视为“希望之大地、机遇之故乡”的生物群落，比如说南美洲的大部分地区，实际上早就只能依靠过度开发，并已到强弩之末的农业维持着。这种超负荷的运转能维持多久，情形不容乐观。

在贫瘠的地区，我们曾试图通过开垦荒地等方式来抵消能量损耗的恶果，但很快就会证明我们的努力仅是杯水车薪，大部分的改造计划和工程没有多久就会夭折。在我们的西部地区，即便最好的改造工程也持续不了一个世纪。

历史和生态学共同支持了这样一个普遍性的论断：人类对自然界的改造活动愈温和，能量金字塔成功适应调整的可能性就愈高。同时，人类对自然界改造活动的剧烈程度取决于人口的密度。人口密度越高，对自然界的改造活动就越剧烈。从这一点上来讲，北美的生物群落应该比欧洲的生物群落更有耐久性，如果它能够努力限制人口密度的话。

但是，上面这种普遍性的论断与我们目前的哲学观念是相冲突的。因为就哲学观念而言，人口密度的小幅增长都能够丰富人类的生活，因此人口密度无限制的增长，人类生活就能无限制的丰富。但是生态学认为，人口密度与人类生活之间的正比关系并不是无限制的。所有因人口密度提高而获得的人类生活质量的提高，都要受制于报酬递减规律。

不管人类与土地之间关系的方程式如何，我们目前尚无法知道方程式中所有的参数。最近关于矿物质与维他命的科学研究表明，能量向上循环时有很多以前不为人知的相互依赖关系。比如某些含量极为微小的物质，却能决定土壤对于植物、植物对于动物的价值。那么，能量向下循环时的情形又是如何呢？那些存在下来被视为美学方面的奢侈品、因而正在消逝的物种，其价值又是怎样呢？毫无疑问的是，它们也是土壤的有机组成部分之一；但尚无从知晓的是，它们对于土壤的维护有哪些必不可少的作用？韦弗教授建议我们使用草原上的野花来使干旱尘暴区重现盎然生机，但又有谁能知道将来我们会把鹤、秃鹰、水獭和灰熊等派上什么用场呢？

关于自然资源保护的争论

因此，土地伦理道德反映了一种生态良心的存在，而这种生态良心反过来也反映了“维护土地健康是每个人的义务和责任”已成为社会大众的共识。而所谓的土地健康是指土地自我修复的能力，自然资源保护则是指我们为认识及保护那种能力所付出的努力。

然而，环保主义者向来以其意见分歧“著称”。表面看来，众说纷纭的论点使公众感到困惑懵懂，但仔细观察下来，在许多专业性的领域，人们的观点无外乎两大基本的类别，我们不妨称之为 A 类和 B 类。A 类通常认为土地就是土壤，它的功用就是用于商品生产；B 类则通常认为土地是一个有机的生态群落，有着更为广泛的功用，

但至于有多么广泛，他们也坦承还说不清楚。

比如说在我的专业领域——林业学，A类的学者非常赞同种植像卷心菜那样的植物。因为只有富含纤维素的植物才具有商业价值。他们对于自然界劫掠式的改造与开发显然不持反对立场，其意识形态是农业经济式的。但是，B类的学者则认为林业学与农业经济学是截然不同的。因为林业学是在利用自然物种，是对自然环境的一种管理，而不是创造一个人工的“自然环境”。一般来讲，B类学者倾向于对自然环境的复制。基于生物和经济的理由，对于栗子、北美五针松等物种的减少或濒临灭绝感到忧心忡忡。同时，他们也忧心于森林的一系列次级功能的运转，比如说野生生物、休闲娱乐、野地、分水岭等。在我看来，在B类学者身上，能感受到生态良心的脉动。

在野生生物学领域，同样存在类似的情况。A类的学者认为猎物和肉是最基本的商品。而衡量产量的尺度是能捕猎多少野鸡和鳟鱼。如果单位产量生产成本允许的话，甚至还可以长期地依靠人工养殖的办法来生产野鸡和鳟鱼。而B类学者则对生态循环中的一系列衍生问题忧心不已。比如说，生产供掠食动物猎捕的猎物会付出什么代价？我们是否该更依赖外来的动物？怎样才能挽救草原松鸡等濒临灭绝的物种？怎样才能挽救天鹅和美洲鹤等日渐稀少的平胸鸟类？资源保护措施能否扩及至野花？和在林业界一样，在此我们同样可以清楚地看到两种意见的分歧。

在范围较广的农业领域，我比较外行，不便发表意见，然而似乎也存在着那种情况。在生态学诞生之前，农业科学就已经蓬勃发展了。因此，生态学上的概念要想渗入到农业领域，预想应该不是一件容易的事情。再加上农民与生俱来的收获欲和生产欲，他们会以比林业工作者和野生生物管理者们更为彻底的方式来改造生态群落。然而，在农业界也存在一种不满的声音，他们主张进行“生态农业”式的可持续性耕作。

在这些现象当中，最重要的或许是一个新的迹象：农作物的食品营养价值不是以农作物的亩产量为衡量标准的。肥沃土壤出产的农作物无论在质上还是在量上都比较有优势。在贫瘠的土壤上，通过施加肥料，我们也可以增加亩产量，但是却无法增加农作物的食品营养价值。关于这一点，会有众说纷纭的见解，我无法在此一一阐释。

有些异议分子标榜“有机耕作”，尽管带有某些宗教崇拜式的狂热，但他们的主张毕竟是以生态学为导向的，尤其是他们坚持强调与土壤相关的动植物群落的重要性。

就像对于土地使用的其他方面的知识所知甚少一样，人们对于农业的基本生态知识也所知寥寥。比如说，在受过教育的人当中，很少有人能意识到人们最近几十年在技术上取得的惊人成就仅仅是在抽水设备的改进上，而非掘井技术的改进。人们技术进步的成果并不足以抵消土壤肥力下降的速度和危害。

在上述所有的观点分歧中，我们可以发现几个基本性的悖论贯穿其中，即作为征服者的人类与作为生态群落公民的人类、作为磨砺人类工具的科学与作为宇宙“探照灯”的科学、将土地视为奴隶和仆人与将土地视为群集性的有机体。在这样一个关头，鲁宾逊对于特里斯坦（译注：是一个骑士，爱上了与他的叔叔康沃尔国王马克订了婚

的爱尔兰公主伊休尔特）的责诫正好能够用于告诫地质时代中的一个物种——智人：

不管愿意与否，特里斯坦，
你是一个王，
因为你是少数几个能通过时间考验的人之一，
当你们逝去后，世界将会改变面目。
请想好你要留下些什么。

前景展望

在我看来，倘使人们对于土地没有一份热爱、尊敬和欣赏的情怀，对于土地的价值没有一份崇高的敬意，那么，人与土地之间的伦理关系是不可能存在的。我所说的土地价值的含义当然要比人们通常所认为的简单的经济价值要宽泛得多。我是从哲学层面来界定土地价值的。

导致土地伦理道德建构与发展迟滞的最严重障碍在于我们目前的教育体系和经济体系非但没有培养人们强烈的土地意识，反而与之渐行渐远。因为有太多太多的媒介和物质器械，导致现代人与土地之间产生了一道不可逾越的鸿沟。在人类看来，他们与土地之间没有生死与共的关系：土地只是城市与城市之间生长着农作物的地方。假如给他们一天的时间在某处土地上休闲，如果休闲的地点不是高尔夫球场或一个风景区，那么他们会感到无聊透顶。如果水培法能取代耕种法来培育农作物，他们会感到妙不可言。同时，在他们看来，人造的合成品要胜过木材、真皮、羊毛和其他土地上的自然产物。总之，他们认为自己可以脱离土地而生存。

导致土地伦理道德建构与发展迟滞的另一个几乎同等重要的障碍是农夫们的态度。他们视土地为敌人，或者是奴役他们的工头。从理论上讲，农业的机械化应该可以减轻农民们的负担，但实际上能否如此很值得商榷。

从生态学的角度来理解土地有机体的运转，首先需要通晓生态学。然而，当今的教育体系非但没有将生态学发扬光大，反而愈高等的学校教育愈是要有意避开生态学概念似的。当然，生态学方面知识的获取并不一定非要通过“生态学”这一课程。我们从地理学、植物学、农艺学、历史学或经济学当中都可以汲取到相关的知识。而诸种课程内容的安排事实上也应该是这样，但在当今的教育体系中，无论是哪种学科，涉及到的生态学知识仅仅是凤毛麟角。

因此，如果没有极少数人的敢于挑战“潮流”与“权威”，土地伦理道德体系的建构简直是不可能的。

在土地伦理道德形成与发展的过程中，必须移除的最大障碍是：不要再单纯地从经济学的角度来规划如何更好地利用土地。在考察任何问题时，除了要考虑有无经济

上的利益，同时还要顾及道德的维护与审美的需要。只有当某种措施可以保持生态群落的完整性、稳定性及美好性时，它才是正确的，反之则是错误的。

毫无疑问，土地使用规划中的经济利益评估能决定我们在利用土地时的“有所为”及“有所不为”。过去是这样，现在是这样，以后还会是这样。但是，经济决定论使我们陷入一个误区，即认为经济利益决定一切土地的使用。这是不正确的，我们必须予以摒弃。在土地与人之间的所有关系中，大部分人对于土地的态度和行为取决于他们的偏好及口味，而不是取决于他们的金钱。同时，土地与人之间的关系，大部分取决于时间、远见、技能和信念的投注，而非金钱的投资。土地使用者的观念在某种程度上可以说明他们的为人。

我刻意将土地伦理道德的形成视作社会演化的产物，因为像伦理道德这样重要的东西是无法由某个人单独用文字记载的。历史学系中只有那些最肤浅的学生才会真的认为是摩西写下了“摩西十诫”。实际上，“摩西十诫”是群体智慧的演进和结晶，而摩西仅仅是有了“时势造英雄”的机会，尝试性地将其总结概括了一下而已。这里之所以说是“尝试性”的，是因为进化永无止境。

土地伦理道德的形成与发展既是知识发展的过程，也是感情投入的过程。在自然资源保护的领域中，许多出发点良好的举措到头来证明是徒劳无功的，甚至是有害的，其原因就在于对于土地有机体本身或是土地使用的纯粹经济利益导向缺乏严峻的认识和批判。当伦理道德从个人延伸至整个社会时，知性的内容会增加，感性的内容会相应减少，我认为这是一个不言而喻的道理。

任何一种伦理道德，其运行机制都是相同的。即正确的行为能得到社会的认可、错误的行为会受到社会的谴责。

总之，我们当前的问题主要是态度问题及对政策贯彻方面的问题。我们正在用蒸汽挖土机重塑着阿尔罕布拉，并为此感到自豪。如果要我们放弃使用那种挖土机，我们会很难做到，因为毕竟它们具有很多优点。但是，我们的确也需要认真思考一下，正确利用那种挖土机的客观评价标准到底是什么。

野地

野地，就像是一种原始材料，人类从中发明出了各式各样的人造物品，我们称之为文明。

但是，野地这种原始材料不是同质的，而是千姿百态，多种多样的。因此，由此派生出的人造物品也是多种多样的。各种成品之间的这些差异，我们称之为文化。人类世界各种文化纷繁复杂的差异性，恰恰反映了它们的母体——野地纷繁复杂的差异性。

当前，人类历史上第一次开始遭遇两种迫在眉睫的变化：一是随着全球人口和可居住面积的增加，野地变得愈来愈稀少；二是现代化的交通及工业文明的进步，促进了全球各种文化的交流、竞争与融合。两种趋势都不可避免，也不应当人为地去阻止。但问题是，面对这两种变化和趋势，我们能否稍微加一些改进，使某些可能会在那两种变化中消失的社会价值得以保留下来。

对正在汗流浃背努力工作的劳动者而言，铁砧上的原材料是他们要征服的对象。同样，对于拓荒者而言，野地是他们要征服的对象。

但是，对于那些处于休息状态的劳动者而言，如果他们能够用饱含睿智的眼光来观察他们周围的世界，那么，同样一块放在铁砧上的原材料却是值得珍惜与爱护的。因为正是这些原材料铸就了他们生活的内容和意义。由此便产生了保护野地资源的呼吁。正是在这些人的努力下，一些残留的自然资源才得以在博物馆保存下来，从而能够启发、教化日后那些想观看、感觉或研究自己文化遗产之起源的人们。

残余野地

当初供我们打造美国的形态缤纷的野地，如今大部分都已经消失了。而能够残存下来的支离破碎的野地，无论是在规模上，还是在原汁原味的程度上，也都发生了巨大的变化。

现在，人们已经无法再看到长着高禾草的大草原了。早在拓殖时代，大草原还是一片花的海洋，而如今“踏春归来马蹄香”只能成为过去的回忆。那时，草原上有上百种奇花异草，大部分还非常美丽。拓荒者占领了它们的地盘，却视那些奇花异草为草芥，根本不知道欣赏它们的美丽。而现在倘使能发现一片植物物种可以存活下去的40亩见方的大草原就已经很不错了。

然而，短禾草大草原——卡皮查·德·瓦卡曾经在水牛肚皮底下欣赏地平线的地方，尽管也没有幸免于牛羊的过度啃噬和农夫们的破坏，却仍在各地残留了大约1万

亩的规模。如果淘金客值得在美国国会大厦的纪念物上留一笔的话，他们的大举迁徙是不是也应该在由此得以保留下来的几处国家草原保护区的纪念碑上留一笔呢？

现在，人们也已经无法再看到美国密歇根州的原始松林，或者沿海平原上的平坦林地或硬木林了。倘使能够残存几亩这样的林地作为样本进行纪念，我们就很知足了。但是，我们还有上千亩规模的枫林和铁杉树林，阿巴拉契亚山上也有同等规模的硬木林。此外，我们还有南方的硬木林泽和柏木林泽，以及阿第伦达克山上的云杉。只是它们将来恐怕也无法免遭砍伐和让位于观光道路的命运。

野地萎缩最急剧的是在海岸线一带。在大西洋和太平洋沿岸，日益增加的观光道路和供观光客休憩的小别墅，使绵长的海岸线有侵蚀甚至消失之虞。苏必利尔湖如今也逐渐开始丧失它在北美五大湖中所保留的最后一片原始的湖岸线。没有哪种类型的野地会像海岸线那样与历史有那么紧密的联系，也没有哪种类型的野地会像海岸线那样遭遇如此彻底的侵蚀。

在落基山脉以东所有的北美地区，只有一大片区域被正式作为野地保护区保留了下来。那就是位于明尼苏达州和加拿大安大略省的奎提科 —— 苏必利尔国际公园。在这个雄伟壮丽的地区，河流与湖泊星罗棋布，号称独木舟的故乡。它的大部分地区位于加拿大，而且如果加拿大同意的话，它覆盖的区域可以想要多大就有多大。但是近来，这个地区的完整性受到两种发展趋势的挑战：一是钓鱼度假区日益增多，这些度假区往往还配备有水上飞机提供周到的服务；二是有关管辖权的争论，即属于明尼苏达州的那部分，到底是应该划为国家森林还是应该划为明尼苏达州的森林？总之，整个地区面临着成为权利斗争牺牲品的危险。野地保护支持者们之间的这种令人遗憾的观点分歧，很可能导致“大权旁落”，由掌握权利的人决定那片地区的命运。

在落基山脉纵贯的各州，许多面积从 10 万英亩到 50 万英亩大小不等的国家森林中的一些地区被保留为野地，明令禁止铺设道路、搭建旅馆或用于其他不利于自然资源保护的用途。国家公园也采取了类似的措施，但是却没有明确标示保留区域的界限。整体来说，这些州所划定的保护区域构成了整个自然资源保护计划的中坚，但是它们的发展前途颇令人堪忧。各地发展旅游观光要求修筑新道路的压力，已使当地的自然资源保护区东一块西一块地遭“肢解”；为了防范森林火灾，各地常年都承受着要求扩建道路方便灭火的压力，在压力之下，许多本应保护的地区被改建成了高速公路；无事可做的地方资源养护队也会说服相关地方修建新的但通常是无用的道路；此外，战争时期的木料匮乏，也使许多通向森林的道路的延伸有了冠冕堂皇的理由，合不合法已无足轻重。当前，在许多山区，随处可见将滑雪者拉上山坡的吊索和为滑雪者准备的旅馆，先前这些地方作为自然资源保护区的地位早已被人置之脑后了。

对于野地最阴险的一种侵占就是扛着“控制掠食动物”的大旗招摇过市。其理由及具体操作是这样的：为了保护大猎物，需要将狼、狮子一类的掠食动物清除出野地。这样一来，像鹿和麋鹿这样的大猎物数目激增，以至达到了过度啃牧的临界点，不得

不鼓励猎人们猎捕数目过于庞大的鹿和麋鹿。而现代的猎人又不愿意以步当车，往往是人到哪儿，车就要开到哪儿，因此又必须修建道路来满足猎人的需求。如此发展下去，野地便被蚕食鲸吞得面目全非。而那种情形却没有停止的迹象。

落基山系的旷野地区涵盖了各种各样的森林形态：从西南方的刺柏属丛木到俄勒冈州一望无际的林海，应有尽有。然而，这个地区却缺乏沙漠地带。可能是因为幼稚的美学规定只有具备湖泊和松林的地方才算得上风景区。

但是在加拿大和阿拉斯加，却有广袤的未开发地区。

在那里，没有名字的人沿着没有名字的河流流浪，
孤独而神秘地在神秘而孤独的山谷死亡。

像这些未开发的但有代表性的地区可以、而且应该被保存下来，尽管其中大部分都没有什么经济价值。当然，一定会有人坚称不必为此刻意地制定计划，因为总会有足够的野地被存留下来。但是，所有近来的历史事实都证明了那种想法不过是自欺欺人而已。而且即便野地能够存留下来，其上面寄生的动物群落能存留下来吗？像北美驯鹿、栖居山区的野生绵羊、纯种的北美野牛、极地的灰熊、淡水区的海豹和鲸鱼，现在都有绝种之虞。而失去了这些标志性的动物，野地还能有什么价值呢？现在，有很多社会组织和发展研究机构正在积极地从事北极荒漠地带的工业化推动工作。而且，涉及领域更广的改造计划也在推动的过程中。极北的野地目前还没有正式的保护措施，尽管仍旧广袤，但面积也在逐渐缩小。

加拿大和阿拉斯加能在多大程度上认识到问题的严峻性，并抓住机会加以扭转，我们只能拭目以待。但通常拓荒者对于任何试图将拓荒进行到底的努力都嗤之以鼻。

沙郡年记

供休闲娱乐的野地

无数个世纪以来，人们为了生存而进行的肉体搏斗，实际上是一种经济行为。后来随着社会的进步，这种肉体搏斗便消失了。但作为人类的一种本能，它开始转移到体育运动和竞技比赛上来。

同样，人类与动物之间的肉体搏斗也是一种经济行为。后来发展成为打猎、钓鱼这样的户外休闲运动。

公共的野地首先是藉由户外休闲运动的形式，使原始而强健的拓荒经历和生存技巧永存不朽的一个途径。

其中一些生存技巧已经普及化了。这些技巧的一些细节做了适合美国实际情况的调整，但就其本身而言是世界性的。打猎、钓鱼和背包徒步旅行就是这样的例子。

然而，有两种生存技巧就像山胡桃树那样是美国独有的。尽管世界其他地方也对

此进行了引进和模仿，但唯有在美国这片土地上它们才能发挥到极致。其中之一是乘独木舟旅行，另外一个是与驮货赶脚的队伍一起旅行。只是目前这两种生存技巧的普及性也在急剧萎缩。现在，哈得孙湾的印第安人配备上了小汽船，登山者也装备上了福特汽车。就我而言，如果必须依靠独木舟和驮货的马维持生计的话，也许我也会想方设法地改进工作设备，否则生活会过于艰辛。但是，如果我们想纯粹将漫游野地作为一种休闲娱乐，最好就不要使用机械化和现代化的替代品，否则意境全无。在众多的汽艇当中，用水陆联运的方式运送你的独木舟，或是把你的领头母马带到假日旅馆里的牧场上喂食是没有什么意义的。如果那样的话，倒不如呆在家里。

因为野地从本质上讲，首先是一系列野地游历，尤其是乘独木舟旅行和与驮货赶脚的队伍一起旅行的最具原始性艺术的殿堂。

我想肯定会有人质疑保存那些原始艺术的重要性。我不想与这些人辩论，因为这些人要么是愚不可及，要么是老旧陈腐。

欧洲式的打猎和钓鱼从很大程度上讲就缺乏这种美国式的可以藉由野地保存下来的东西。如果可以避免的话，欧洲人不会在森林里宿营、烹饪或做其他的工作。家庭杂务和日常零星工作一般都交由助手或仆人去处理。因此，欧洲人的狩猎是带着野餐的味道，而不是拓荒的味道；技艺的检验也在很大程度上局限在能打到多少猎物，或是能钓到多少条鱼。

有一些人会认为野外休闲活动“不民主”，因为相对于高尔夫球或观光营地，野地所能承载的娱乐消遣的容纳力是很有限的。这样一种论断最根本的错误在于，以己之矛攻己之盾，即用大批量生产的哲学去对抗大批量生产。休闲娱乐的价值不在于其数量，而是与其所激发的人们感受的强烈程度成正比，与人们日常生活的迥异之处成正比。由此看来，机械化的户外休闲运动只是一种平淡无味的东西。

在山野户外休闲运动中，机械化的趋势已是十之八九。我们应该向剩下的那些致力于回归休闲娱乐乡野化的人们致以崇高的敬意。

供科学研究之用的野地

一个有机体最重要的特征是具有内在自我修复的能力，即维持自身健康的能力。

有两种有机体，它们的自我修复能力和过程受制于人类的干涉和控制。一种是人类有机体本身，即藉由医学和公共健康；一种是土地有机体，即藉由农业和自然资源保护。

然而，试图干涉和控制土地有机体“健康”的努力，成效甚微。现在已经众所周知的事实是，当土壤肥力丧失或流失的速度远远高于土壤形成的速度，或者水利资源呈现出不正常的泛滥和干涸现象，那么就可以说土地有机体处于病态。

还有一些紊乱现象也是客观存在的事实，但还没有纳入土地有机体处于病态的症

状。比如说，某些动植物物种因不明原因消失，尽管之前采取了各种措施加以保护；或者是尽管之前采取了各种措施加以防范，还是有很多害虫数量激增。如果没有更简单的解释，这些都应当作为土地处于病态的症状加以重视。而且这两种情况频频发生，以致于人们容易把它们当作正常的生态现象熟视无睹。

我们对于土地有机体失调的处理方式是很有局限性的，这也恰好体现了我们对于土地有机体失调症状的认识有局限性。因此，当土壤丧失肥力时，我们只是一味地追加肥料，或者至多改造一下土壤上的动植物群落。但在我们这样做的时候，往往忽视了一个事实，那就是这些野生的动植物群落，不但在早期铸就了这片土壤，而且对于土壤肥力的维护也有非常重要的作用。举个例子来说，人们最近才发现，不知什么原因，优良的烟草作物必须在有野生豚草生长过的地方才能茁壮成长。而不为人们所知的是，像这样倚赖共生的关系在大自然中其实是很普遍的事情。

当草原土拨鼠、地松鼠或老鼠数量激增酿成虫害时，我们只是用毒药来控制它们的数量，根本不知道超越这些动物本身来寻找导致它们数目激增的原因。因为我们想当然地认为这些动物本身就是它们所带来危害的原因。其实最近的科学研究发现，植物群落的紊乱才是导致这些动物泛滥的真正元凶。遗憾的是，很少有人沿着这样一条线索做深入的探究。

在许多造林地区，以前一株树能产出三根到四根原木，现在只能产出一根或两根原木。为什么呢？有思想的林务官懂得，其原因不在这些树木本身，而是这片土壤的宏观植物群落出了问题。破坏土壤上的植物群落容易，要修复可就没那么容易了。

显而易见的是，许多自然资源保护措施就像蜻蜓点水般浅尝辄止。比如说，防洪大坝的建立就没有考虑洪水泛滥的原因；拦沙坝和梯田也没有触及土壤流失的根本；维持猎物和鱼类供应的保护区和孵卵处，也无法解释为什么还会发生供应不足的现象。

总之，土地有机体就像人体一样，各个器官相互联系，相互依赖。人体机能出现紊乱，我们不能“头痛医头，脚痛医脚”，同样，土地有机体出现脱序状态，我们也不能一叶障目，不见泰山。我们现在所采取的自然资源保护措施在很大程度上只能减轻土地有机体局部的病痛。这些措施有其必要性，但不能将其与根本性的治疗措施混为一谈。土地机能紊乱的修复是一种艺术，人们现在仅是凭着一腔热情去进行着。真正的关于土地机能健康维护的科学还没有诞生。

关于土地机能健康维护的科学，首先需要一个机能正常的土地作为模板，给人们勾勒出“健康”的土地是怎样作为一个有机体良好运转的。

我们有两个现成的模板。一个是在东北欧，尽管人类已在那里居住了好几个世纪，土地的机能大部分还是很正常的。我们不应该忽略对这个地区的研究。

另外一个也是最完美的模板，就是野地。古生物学上有充分的证据可以证明，在漫长的地质年代，野地一直维持着自身的和谐运转。构成野地的生物物种很少有绝迹的，而且从来没有发生过某个物种生长失序的现象。风化形成土壤的速度与土壤流失

的速度大致相抵。因此，野地是研究土地有机体健康运转的非常重要的活的实验室。

我们不能在亚马逊河流域来研究蒙大拿州的土地机能。每一个生物群落都需要以其自身的野地为载体，来进行土地开化前及开化后的比较研究。当然，我们现在只来得及拯救系统失衡的野地研究区域，而这样的区域也在日渐缩小，难以保持各个方面的稳定性。即使是那些各自都拥有百万公顷面积的国家公园，也无法庞大到足以维持野生掠食动物的程度，同样也无法抵制家禽牲畜所携带的动物疾病。因此，黄石河失去了它的狼群和美洲豹，进而导致麋鹿数量激增，再进而导致整个植物群落面临崩溃的边缘，尤其是那些冬季牧场的植物。同时，因为动物疾病，大灰熊和山区野羊的数量也在急剧萎缩。

然而，尽管连最大的野地都在局部范围内变得功能紊乱，J·E·韦弗只需要一小片野地就能证明，为什么草原上的植物群落比农业区的植物群落更抗旱。韦弗发现，草原上的植物在地表下发挥了很强的“团队精神”，它们的根部四处蔓延，几乎布满了地下土的各个层次。而农业区的植物根茎要么是都对某个地方趋之若鹜，要么是都对某个地方避之唯恐不及，由此逐渐导致土壤肥力的入不敷出。韦弗的发现揭示了一个重要的农业经济学原理。

同样，只需提供一小片野地，托格雷迪亚克就能够发现，为什么古老田地里的松树永远无法像原始森林中的松树那样挺拔、稳固。因为原始森林中松树的根循着古老根茎的路径，扎得非常深。

在很多情况下，我们无法确切地预期健康土地能如何良好地运转，除非我们能有一片野地和一片机能紊乱的土地做对比。因此，尽管根据早期西南部游历者的描述，山区的河流原本是清澈的，但是我们对此持怀疑态度。我们会认为他们是在偶然的时间、偶然的地点发现的。防治侵蚀的工程师们本没有基本的数据资料库，直到在奇瓦瓦的马德雷山脉发现几乎一模一样的河流。因为害怕印第安人，从来没有人在这些地区放过牧，或是开发过这些土地。所以这些河流即使在最糟糕的情况下也只是呈现浅奶白色而已，不至于混浊到看不见鲑鱼的情形。此外，河流两边的堤岸还布满了苔藓。但是，亚利桑那州和新墨西哥州大部分类似的河流则是充满了鹅卵石，没有附着多少苔藓，旁边也没有多少树木。在马德雷山设立一个国际性的实验站，研究这片土地的运转及自身修复，并将其作为典范进行推广，以疗救那些处于病态的

土地，应该是一个能造福子孙、惠及四方的值得重视的设想。

总之，所有现存的野地，无论大小，对于土地科学的研究来说都具有指标性的价值。休闲娱乐并不是野地唯一的、最重要的用途。

供野生生物生存的野地

保护大型的食肉动物生生不息，单靠国家公园是不够的。看看岌岌可危的大灰熊，再看看已经没有狼的公园，就可以明白这一点。除此之外，国家公园也无法确保山区野羊的生存和数量，大多数的羊群正在萎缩中。

导致上述现象的原因，有的明朗，有的不甚明朗。对于活动范围广泛的狼来说，国家公园的承载容纳力无疑是太小了些。但是，由于某些不为人所知的原因，有许多动物物种似乎无法在隔离的状态下大量繁殖。

扩大野生生物生存空间的一个最可行的办法是，将国家森林的外围部分扩展成濒危生物的公园。如果不这样做，大灰熊的濒临灭绝就是一个灾难性后果的例证。

1909 年，我第一次到西部的时候，几乎在每个大山区都能看到灰熊，反而是连续数月旅行都不一定会遇到自然资源保护人员。而如今，几乎每一丛灌木后面都会有一个自然资源保护人员。然而尽管野生生物保护部门林立，仍然无法阻挡大型哺乳动物的颓势，它们急剧萎缩在与加拿大接壤的狭长地带。根据官方报道，美国一共还有 6000 只灰熊，但 5000 只都在阿拉斯加，剩余的也只是集中在美国的另外 4 个州。人们似乎是心照不宣地认为，只要灰熊能在加拿大和阿拉斯加存活下来就足够了。但是，我却不这样认为，阿拉斯加的熊都是独特的物种，将灰熊“委托”给阿拉斯加，就像将幸福“委托”给天堂，而我们也许永远无法到达天堂的美好境界。

拯救灰熊需要一系列没有道路和家畜的广大地区，或者家畜造成的破坏已得到弥补的地区。购买分散在各地的家畜牧场是唯一得到这样一些地区的办法。但是，尽管政府部门愿意通过收购或交换得到那些地区，自然资源保护部门在拯救灰熊方面却几乎毫无进展。林务署在蒙大拿州建立了一个灰熊保护区，但是我也知道，林务署在犹他州的一个山区牧场发展牧羊业，完全不顾这个山区牧场是犹他州唯一残存灰熊的地区。

当然，永久的灰熊保护区与永久的野地是一体的两面。解决其中任何一个问题，单靠热情是不够的，还需要有自然资源保护的长远眼光和历史洞察力。只有那些能够体察生态进化轨迹的人才能够珍惜生态进化的载体 —— 自然界、野地，也才能体会灰熊作为生态进化成果之一的重要意义。但是，如果教育能真正发挥作用的话，将会有越来越多的人能够了解古老西部的历史遗产对于当今西部社会发展的意义和价值。尚未出生的年轻一代也会像刘易斯和克拉克那样乘船游历密苏里河，或者像詹姆斯·卡本·亚当斯那样登上内华达山。而且每一代人都会重复同样一个问题：白色的大熊在

哪里？面对子孙们的疑惑，长辈们只能尴尬地回答，是因为负责自然资源保护的官员们疏忽了。

野地的捍卫者

野地是一种自然资源，它只会萎缩，而不会扩展。人类可以对野地进行改造，使之成为休闲娱乐的场所，或者科学研究的基地，或者野生生物的栖息地。但是要想建造一个新的野地，则是不可能的事情。

所以，任何一个野地保护计划只是一种亡羊补牢的行为，只能把野地的萎缩尽可能降低到最低限度。1935 年成立的“ 野地学会 ”，其宗旨在于拯救美国残存的野地。内华达俱乐部的成员也是基于同样的目的而走到一起的。

然而，仅仅靠这些社团组织来保护野地是远远不够的。即便美国国会针对野地保护专门立法，成效也无法让人满意。除非所有的自然资源保护部门都有很多具有野地保护长远眼光的人士，否则，没有哪个部门或团体能及时发现对于野地新形式的侵害。只能是到了侵害行为带来灾难性后果时，人们才恍然大悟。另外，保护野地还需要有一小批遍及全国各个角落的思想已觉悟的市民，他们能严阵以待任何破坏野地的行为。

在欧洲，野地如今已退缩到喀尔巴阡山脉和西伯利亚一带。每一个具有前瞻眼光的自然资源保护人士无不痛心疾首。英国相对于其他文明国家，土地发展空间有限，但其国内仍展开了一场如火如荼的拯救零星野地的运动，尽管也有些迟了。

总之，能否洞察野地所蕴涵的文化价值，是一个学术人格是否谦卑的问题。不再植根于土地的思想肤浅的现代人想当然地认为他们已经发现了什么才是重要的东西。他们喋喋不休地空谈着能够延续上千年的政治帝国或经济帝国。而只有学者才明白，历史是由连续从同一起点展开的旅程累积而成的，人类不断回到这个起点，为寻求亘古不变的价值观整装待发，开始新的旅程，如此循环往复。也只有学者才明白，为什么原汁原味的野地才能给出对于人类最佳的定义和诠释。

环保美学

除了爱情和战争，还没有哪件事情能像户外休闲运动那样，可以让形形色色的人等如此随意地去进行，其中还夹杂着矛盾而复杂的个人欲望与利他主义的因素。人们一般都认为，户外休闲运动是使人们回归大自然的好运动。但是，究竟好处在哪里？怎样才能鼓励人们去从事这些运动？关于这些问题，不会有明确的答案。去咨询人员那里咨询，也只能是一头雾水，只有那些毫无主见的人才会相信咨询人员的话。

在老罗斯福时代，休闲娱乐开始成为引人注意的问题。那时，将乡野与城市截然

分开的铁路开始载着一批批城里人去乡下游玩。然而，人们逐渐发现，城里人去得越多，人们所能获得的平静与安宁，所能看到的野生生物和自然风景就越少。而要想获得这些东西，就只能到离城市更远的地方去。

而汽车的发明又将上面这种原本比较温和的局部性的困境一直延伸到路况比较好的道路的最尽头，从而使荒郊僻壤越来越缺乏以前所具有的某些东西。然而这些东西又是人们无法离开的。于是，就像太阳的离子群那样，每逢周末，几乎每个城镇都有人群集体出动，到乡野度假。他们走到哪儿，所释放的热量和摩擦力就跟到哪儿。此外，旅游观光业还提供优质的服务，以吸引越来越多的人更方便地到越来越远的地方。一则则旅游广告告诉人们，除了人满为患的景点之外，哪里又发现了新的幽静处、风景区、狩猎区和钓鱼区等等。为方便人们出行，有关当局修建了一条条通往山野的道路，然后再斥巨资购买更多的山野来吸纳随之而来的更多的人潮。另外，各种各样的器械行业能将人们装备停当，以应对大自然的各种挑战。由此，山林野外生存知识便演化为如何使用各种器具的知识。现在，我们更是发明了乘拖车式活动房屋进行旅行，坦白说，这是最枯燥乏味和没有意思的。对于那些只是想从山林中寻找通过旅游和打高尔夫球也可以提供的感觉的人来说，现在这种状态是可以忍受的。但是对于那些想亲近自然，寻求新奇与刺激的人来说，户外休闲娱乐的真谛已被机械化的社会破坏了，寻求的过程无异于自我毁灭和遭受挫折的过程。

在现代化游人的密集攻势下，野地变得越来越少，这已不是哪个地区的新鲜事儿。哈得孙湾、阿拉斯加、墨西哥、南非的野地首当其冲，南美洲和西伯利亚的野地次之。莫霍克河沿岸的鼓声，如今被世界各地汇聚于此的汽车喇叭声所取代；现代人的活动范围也已不再满足于自己的家园；他们用汽车的储油罐承载着许多世纪以来无数的生物（包括人类）渴求寻找新牧场的动力，就像蚂蚁一样成群结队地去寻求新大陆。

这就是最新潮的户外休闲运动的形式。

那么，谁是这些户外休闲运动的主角？他们在追寻什么？下面这些例子可以告诉我们答案。

首先我们来看一下如今鸭子栖息的沼泽地，停放着的车辆将它们团团包围。一些所谓的社会精英蹲伏在任何有芦苇做掩护的沼泽地边缘。他们手拿自动步枪，迫不及待地想开枪射杀一只鸭子，全然不顾社会所制订的法律。尽管他们都已吃得很饱，但却丝毫无法减灭他们向上帝索取鸭肉的欲望。

还有一些所谓的社会精英会在附近的森林中漫步，试图寻获珍禽异草，比如说蕨类植物或鸣禽之类。他们这种类型的寻获一般不需要窃取或掠夺，因此他们很瞧不起那些捕杀猎物的人。然而，不管他们乐不乐意，他们也是一种捕杀野生生物的人。

在附近的度假胜地，还有一些所谓的大自然爱好者。他们在桦树皮上雕刻拙劣的诗句。此外，到处还可见到一些非专业的汽车驾驶者，他们以长途驾驶，积累里程为

乐。才一个夏天，他们就已经跑遍了所有的国家公园，现在正向南面的墨西哥城进发。

最后，还有那些所谓的自然资源保护人员，他们通过数不胜数的自然资源保护组织，想方设法地满足在自然界中探索、漫游的社会大众的需求，并千方百计地使社会大众需要他们所能提供的东西。

那么你也许会问，为什么形形色色的人都可以囊括到这样一个简单的种类中呢？因为不管个人的行为有多大差别，他们本质上都是猎人。既然如此，为什么每个人还称自己是环保主义者？因为每个人都无法轻松自如地掌握自己想追寻的野生生物，于是便挖空心思地利用一些法令、拨款、区域发展计划、部门重组或其他有大众意愿背书的形式，妄图使自己想要的猎物可以“原地不动”。

提起户外休闲运动，人们就会将之与经济资源联系在一起。参议院的委员会用确凿的数据告诉人们，公众在探索、漫游自然界方面花费了多少巨额资金。钓鱼度假区供游人休憩的别墅、沼泽地上的猎鸭点，其花费都不亚于邻近整座农场的开销。因此，户外休闲运动的确有其经济性的一面。

同时，户外休闲运动还有其道德性的一面。在大家竞相寻找未经破坏的野地时，人们会制定一些游戏规则和戒律，比如说我们经常听到的“户外运动守则”，我们还会把这些守则灌输给下一代。我们将“什么是运动员道德”印制成册，卖给那些愿意花费一美元为发扬光大这些道德做贡献的人们。

然而，户外休闲运动所具有的经济性和道德性只是户外运动原动力的结果，而非原因。我们寻求与大自然亲密接触的方式，是因为我们能从中得到乐趣。就像在歌剧中，象征着经济的器械是用来创造并维护必要设备的工具，专业人员通过塑造维持人物形象而维持生计。但是如果我们说在这两种情况中，其基本的动机或存在的理由是纯经济性的，那么我们便犯了一个错误。躲在暗处的猎鸭者与舞台上的歌剧表演者，尽管他们的装束截然不同，实际却在做着本质相同的事情。两者都是通过各自的行动上演着一幕从前与人们的日常生活紧密联系的剧作。归根究底，两者都是一种美学实践。

户外休闲运动的公共政策极具争议性。在什么是户外运动的资源基础以及怎样维护这些资源方面，具有同等良知的公民却有可能持完全相反的观点。比如说，野生生物学会极力主张禁止在野生偏远地区修建道路，商会组织却极力主张扩建道路，而两者都是打着户外休闲运动的旗号。猎物饲养者见鹰就猎杀，因为他们要保护自己的猎物；鸟类爱好者却呼吁要保护鹰，因为他们喜欢用野地望远镜观察各种鸟类。这两种派别常常相互攻击、谩骂。实际上他们都是只从自身角度来看待户外休闲运动而已。只是不同角度所反映的问题特性与本质有天壤之别，因此一些既定政策从某个方面来说是正确的，从另外一个方面来说就有可能是错误的。

因此，我们应该将这些不同的角度区隔开来，对其各自的特性和本质分别加以审视。

让我们从最简单、最明显的地方入手，即户外休闲运动者可能会寻找、发现、捕捉和带走的实物。例如，猎物和鱼等野生生物，猎物的头、兽皮、相片和标本等象征野外活动收获的纪念物。

这一切事物都是建立在“战利品”这一观念基础上的。它们给我们带来的，或者说应该带来的快乐，不但蕴于我们所得到的，也在于我们得到它们的过程。这些战利品，不管它是一颗鸟蛋、一群鲑鱼、一篮子蘑菇，还是一只熊的照片、一朵野花的压缩标本或是我们在一座山上的石堆纪念碑中塞入的字条，都是一种证书。它们证明着其所有者曾经到过某个地方并做过某件事情，证明着其所有者曾在漫长的征服、智取或占有方面所发挥的技能、毅力和鉴别力。这些战利品在这些方面所蕴涵的意义要远远超出其物质价值本身。

但是，当追求这些战利品的行为由个人扩展到集体，产生规模效应时，其蕴涵的意义就大打折扣了。比如说，如今的猎物和鱼可以通过人工养殖和管理达到非常庞大的数目，不但可以满足每个猎人足够的需要，也可以满足更多猎人的需要。在过去的10年间，野生生物饲养及管理行业兴起，很多大学都有专门课程教授如何更多、更好地培育野生生物。然而物极必反，当超过某种限度时，这种提高产量的做法会受制于报酬递减规律。密集化、人工化的猎物或鱼类管理也降低了单位“战利品”的价值。

我们来看一个例子。一条人工饲养的鲑鱼从鱼类孵化场长大，刚刚被放到一条已过度捕捞过的小溪中。这条小溪不能再自然地生产鲑鱼，因为它的水流要么已遭到污染，要么是因为森林的过度砍伐和牲畜的过度践踏而变暖或被淤泥堵塞。这时，没有人会认为这条鲑鱼与一条从高耸的落基山上某条未被破坏的小溪中捕捞的鲑鱼有相同的价值。因为它在美学上的蕴涵大打折扣，即便捕捉它也需要技术。并且，据某专家的说法，这条鲑鱼的肝脏经过人工饲养，其功能会大大退化，以致于出现早夭。然而尽管如此，现在一些溪流遭过度捕捞的州，几乎完全依赖这些人工饲养的鲑鱼。

实际上，在各个地方都存在着不同程度的人工化的痕迹，只是当这种人工化的行为变成大规模的行为时，往往会将所有的自然资源保护技巧推向人工化的极端，从而会大大降低所有“战利品”的价值。

为了保护这种人工饲养的、昂贵的、多少显得有些无助的鲑鱼，自然资源保护委员会认为不得不杀死所有经常光顾鲑鱼孵化场的苍鹭和燕鸥以及所有生活在鲑鱼长大后被放进的那条溪流中的秋沙鸭和水獭。对于这种以一种野生生命换取另外一种野生生命的做法，钓鱼者也许会无动于衷，因为对他们来说没有什么损失，但对于鸟生物学家来说就完全不同了。事实上，这种人工化的养殖和管理，是以牺牲另外一种或许更高级的休闲娱乐方式为代价，来换取捕鱼权。就像是从社会大众共有的股本中，仅付股息给一个人。类似的情形在猎物管理界也很盛行。长久以来，野生生物捕获量的统计在欧洲一直在进行。我们甚至都能知道猎物与食肉动物之间的兑换比率。例如，在萨克森，每捕获7只鸟，就会有1只鹰死去；每捕获3只小型猎物，就会有某种食

肉动物因此而遭殃。

另外，伴随动物的人工化饲养及管理，植物的生命也受到很大的威胁。我们以森林因鹿而受到破坏为例，在德国北部、美国宾夕法尼亚州东北部、开巴布高原以及其他很多不为人所知的地区，随处可见这样的现象。在这些地区，因失去天敌而过度繁衍的鹿，使得它们食用的植物根本无法存活或继续繁殖。像这样受害的植物包括欧洲的山毛榉树、枫树和紫杉，美国东部各州的加拿大紫杉和北美香柏或美国尖叶扁柏，美国西部的短叶紫杉和峭壁玫瑰等等。总之，在鹿满为患的情况下，从野花到森林中的树木，植物群落的构成成分愈来愈贫乏，而这又造成鹿因营养不良而变得矮小。以前，雄鹿的角会被用来装饰封建王国的城堡，而如今，我们已无法在森林中看到那些长着美丽鹿角的雄鹿了。

在英国的石南荒野，兔子在猎捕鹌鹑和野鸡的过程中受到格外的保护，以致于新树无法成长。在很多热带岛屿，为了提供食用肉和前来消遣打猎者的猎物，人们大量引进培育了山羊，结果岛屿上的生物群落因此而遭了殃。当哺乳动物失去了天敌，当食草动物失去了赖以生存的植物，我们实在无法估计究竟会带来多大的灾害。在种种不合理的生态管理夹缝中苟延残喘的农作物，只有在带有铁刺的电线网的保护下和无休止的农业赔偿的支持下，才能勉强生存。

因此我们可以得出结论：在追求“战利品”时大规模使用人工化的手段，会降低猎物和鱼类等“战利品”的价值，同时还会给其他的生态资源，包括非猎物的动物、自然植被和农作物等带来破坏。

但是，对于相片之类的间接“战利品”而言，它们所造成的破坏不是很明显。大致说来，一处风景即使一天之内有数十名游客拍照，也不会对风景本身造成实际损害。拍照上百次也是一样。因此，相机工业是依附于野生自然界少有的几个无害的“寄生产业”之一。

总之，我们对于大量地追求两种被当成“战利品”的实物时，有着根本不同的反应。

下面，我们来考察一下户外休闲运动另外一个更微妙、更复杂的方面——身处自然界时的孤独感。有关野地的争论可以证明，这种感觉对于一些人来说具有稀世价值。根据官方的定义，野地应该是没有阡陌交通的，只在其边缘地带有道路与外界相联系。因此它们被宣传为珍奇独特的，而事实上也是如此。但是，近来那些通往野地的道路都人满为患，飞机连落脚的地儿都没有。偶然发生的几次火灾也使在野地修建道路成为必需。因此，野地被一条道路一分为二，以便运送消防队员。关于通往野地的道路拥塞的宣传，也刺激了导游与行李搬运价格的飞涨。因此有人指出关于野地的政策是不民主的。当地的商业公会，最初的时候对于政府将一片穷乡僻壤划为野地的新奇做法表示不以为然。但当他们尝到前来旅游者挥洒的大把大把钞票的甜头后，也不管什么野地不野地了，只要能多赚钱就好。于是，吉普车、飞机竞相上阵，彻底消除了野

地所能给予人的那种孤独感。

简而言之，在广告和促销风气的推动下，越来越罕见的野地常常会令那些想努力阻止其缩减的人感到无能为力。

毫无疑问的是，人工化手段的大规模采用直接减少了人们可以在野地享受孤独的机会。当我们将道路、露营场所、步道和盥洗室等视为娱乐资源的开发及利用时，我们其实是犯了一个错误。因为从是否增加或创造野地的意义来看，这些为游人准备的膳宿装备并没有开发出任何有价值的东西。相反，它们就像是被倒入已经很稀释的汤里的水。

现在，我们来比较一下这个享受孤独的成分与另一个非常独特但比较简单的成分，即我们称之为“新鲜空气和环境变化”的东西。人工化手段的大规模使用既无法破坏也无法稀释这种成分的价值。去国家公园游玩的第一千位游客与第一位游客会享受几乎同样的新鲜空气，也会感受几乎同样的独特经历。我们甚至还可以认为，对于户外休闲活动的群集性侵扰加深了这种对比。因此，我们可以说，新鲜空气和环境变化这种成分就像“战利品”中的照片，在大规模使用人工化手段的情况下，不会受到破坏。

下面，我们再来看另外一种成分：土地和寄生其上的生物得以形成各自独特存在形式的自然发展过程（即进化）与土地和寄生其上的生物赖以维持生存的手段（即生态），合在一起我们称之为“自然科学”。尽管它令自认为是精英分子的专业人员望而却步，但确实是社会大众对于生态进化所做的初步探索。

生态进化最突出的特征是它不耗费任何自然资源，也不会稀释任何自然资源的价值。例如，老鹰觅食，在一些人看来是生态进化的写照，但在另外一些人看来则是对于自己煎锅中食物的威胁。当这种景象被认为是生态进化的场景时，可能还会有更多的目击者为之振奋；但当它被认为是一种威胁时，那么只会有一个人为之兴奋，因为他开枪射死了它。

提高人们对于生态进化的认识，是户外休闲娱乐中唯一的真正具有创造性的部分。

这个事实是很重要的，但是人们对于它在改善人们生活方面潜力的了解还很模糊。当丹尼尔·布恩最初踏上那片被称作“黑暗而血腥之地”的森林和草原时，他将美国这片具有“野地”纯

粹要义的标志性土地据为己有。当然，他没有用“野地”这一措辞，但是他却在那片土地上发现了我们现在梦寐以求的东西。

然而，休闲娱乐并不是野地的代名词，而是我们对野地的反应。丹尼尔·布恩对于那片土地的反应不但是基于他所看到的事物的本质，而且是基于他发现那些事物本质所凭借的“心灵之眼”的本质。而生态科学使我们的“心灵之眼”发生了变化。以前在布恩看来仅仅是事实的东西，生态科学现在为我们揭示了它们的起源和功能。以前在布恩看来仅仅是属性的东西，生态科学现在为我们揭示了它们的运行机制。对于这些变化，我们尚未有衡量的标准，但我们可以确定地说，与当今知识渊博的生态学家相比，布恩只是看到了事物的表面。布恩与现在的巴比特式人物（译注：中产阶级成员，对自己的职责和社会理想过于依恋而使之成为思想狭窄和自满的典型）一样，无法感知也无法理解动植物群落的那种难以想像的错综复杂，这种错综复杂被称作美国的、正值花样年华的生态有机体的内在之美。而美国休闲娱乐资源唯一真正的发展便在于美国人对于生态科学感知才能的提高。所有我们以“发展”的名义而进行的其他行为，至多只是试图延缓或掩饰我们对于生态科学的感知而已。

但是，我们不能因此妄下结论，认为巴比特们必须先拿到生态学的博士学位，才能够“看到”或感知他的国家。相反，拿到生态学博士学位的人可能和殡仪事务承办人一样，对所从事的神秘活动无动于衷。人们对生态科学的感知就像大脑其他珍贵的组成部分一样，可以分成无限多的小部分，同时还不丧失本色。城市里某片土地上的野草和红杉传达着同样的教训；在南太平洋探险的科学家们可能无法感受农夫们在农场上所能看到的事物。总之，尽管生态科学是放之四海而皆准的真理，我们无法用学位或金钱买到对它的感知。不过，对于生态科学稍微有些认识，就有可能得到与生态科学专家一样多的好处。而且这些人都认为，一窝蜂地去追求休闲娱乐是无益的，也是没有必要的。

最后，我们再来看第五个成分：即管理意识。对于这个成分，那些只是用选票来呼吁而不是用实际行动参与管理的户外活动者是认识不到的。只有那些具有生态科学感知的人将某种管理艺术运用于土地使用时才能认识到。或者说，这种成分的享用是两种人的专利，即过于贫穷以致于无法进行户外休闲活动的土地持有人和有着锐利眼光和生态思维的土地管理者。花钱去旅游的人会错过这种成分，雇佣州政府或下属来管理猎物的户外活动者也会错过。政府试图用权力代替私人进行户外娱乐场地的管理，却在不知不觉中将大部分它想提供给市民的东西转让给了负责这片土地的官员。从逻辑上讲，我们这些林务官和猎场管理人员应该为我们所从事的野生生物管理工作付钱，而不是领取薪水。

农业界多少可以明白，在生产农作物时所运用的管理意识可能和农作物本身一样重要，但是自然资源保护界却不明白。美国的户外休闲运动爱好者蔑视苏格兰荒野和德国森林中那种密集捕获猎物的做法，在一定程度上，他们是正确的。但是，他们却

彻底忽视了欧洲土地所有者在耕作打猎过程中所发展起来的管理意识。而且到目前为止我们尚未培养起这种意识，尽管这种意识很重要。当我们决定必须以农业津贴来刺激农民发展林业，或者必须以打白条的形式来鼓励农民发展畜牧业，我们其实是在承认，我们和农夫都没有认识到野地管理的乐趣。

科学家们有一句隽语：生物个体的生长发育是整个生物进化史的重复，也就是说，每一个个体的发展不断重复着整个种族的进化史。在精神和物质的层面，这种说法都是正确的。寻求战利品的猎人可以说是穴居人的再生。寻求战利品是年轻人的特权，这没有什么好辩解的。

但是当前有一种令人非常不安的现象，就是在那些年轻的猎人当中，享受孤独、洞察生态进化规律、进行明智管理的能力非但没有获得发展，有的甚至还消失了。他们是机动化的人类，在还没有学会认真体察生养自己的土地之前，他们就一窝蜂地涌向其他的地方。他们只是在消耗户外运动带给他们的满足感，却不会创造这些能令他们满足的事物。为了给他们提供便捷的服务，户外休闲娱乐的工程师“稀释”了野地的价值，“人工化”了各种战利品，却自以为是在为大众服务。

以寻求战利品为目的的休闲运动爱好者有一些特性，以某些微妙的方式，演变成自己的不利因素。为了轻而易举地享受，他们必须占有、侵占甚至盗用良田或好的猎场。因此，他们自己不能亲眼看出野地的价值，就会认为这片土地一文不值。也因此，他们认为荒郊僻壤对社会没有任何贡献。对于缺乏想像力的人而言，地图上的空白之处就是没有用的废地，但对于其他人而言，这片土地可能弥足珍贵。(比如说，我能在阿拉斯加州所享有的东西，是否会因为我从来不会去那里而变得毫无价值？我是否需要一条道路指引我去北极的大冰原、育康的天鹅草场，去看科迪亚克熊和麦金利山背后的绵羊牧场？)

总之，初级的户外休闲运动似乎消耗了它们的资源基础，在某种程度上，高级的户外休闲运动在基本不消耗土地或野生生命等资源的情况下，创造了属于自己的满足。在追求户外休闲运动的过程中，是交通工具的使用、扩张和对生态科学认识的相对停滞导致了野地价值的沉沦。休闲娱乐的发展不是要兴建通往美丽乡村的公路，而是要培养人们对于自然生态的感受力。

Part I
A Sand County Almanac

January

January Thaw

Each year, after the midwinter blizzards, there comes a night of thaw when the tinkle of dripping water is heard in the land. It brings strange stirrings, not only to creatures abed for the night, but to some who have been asleep for the winter. The hibernating skunk, curled up in his deep den, uncurls himself and ventures forth to prowl the wet world, dragging his belly in the snow. His track marks one of the earliest datable events in that cycle of beginnings and ceasings which we call a year.

The track is likely to display an indifference to mundane affairs uncommon at other seasons; it leads straight across-country, as if its maker had hitched his wagon to a star and dropped the reins. I follow, curious to deduce his state of mind and appetite, and destination if any.

The months of the year, from January up to June, are a geometric progression in the abundance of distractions. In January one may follow a skunk track, or search for bands on the chickadees, or see what young pines the deer have browsed, or what muskrat houses the mink have dug, with only an occasional and mild digression into other doings. January observation can be almost as simple and peaceful as snow, and almost as continuous as cold. There is time not only to see who has done what, but to speculate why.

A meadow mouse, startled by my approach, darts damply across the skunk track. Why is he abroad in daylight? Probably because he feels grieved about the thraw. Today his maze

of secret tunnels, laboriously chewed through the matted grass under the snow, are tunnels no more, but only paths exposed to public view and ridicule. Indeed the thawing sun has mocked the basic premises of the microtine economic system!

The mouse is a sober citizen who knows that grass grows in order that mice may store it as underground haystacks, and that snow falls in order that mice may build subways from stack to stack: supply, demand, and transport all neatly organized. To the mouse, snow means freedom from want and fear.

A rough-legged hawk comes sailing over the meadow ahead. Now he stops, hovers like a kingfisher, and then drops like a feathered bomb into the marsh. He does not rise again, so I am sure he has caught, and is now eating, some worried mouse-engineer who could not wait until night to inspect the damage to his well-ordered world.

The rough-leg has no opinion why grass grows, but he is well aware that snow melts in order that hawks may again catch mice. He came down out of the Arctic in the hope of thaws, for to him a thaw means freedom from want and fear.

The skunk track enters the woods, and crosses a glade where the rabbits have packed down the snow with their tracks, and mottled it with pinkish urinations. Newly exposed oak seedlings have paid for the thaw with their newly barked stems. Tufts of rabbit-hair bespeak the year's first battles among the amorous bucks. Further on I find a bloody spot, encircled by a wide-sweeping arc of owl's wings. To this rabbit the thaw brought freedom from want, but also a reckless abandonment of fear. The owl has reminded him that thoughts of spring are no substitute for caution.

The skunk track leads on, showing no interest in possible food, and no concern over the rompings or retributions of his neighbors. I wonder what he has on his mind; what got him out of bed? Can one impute romantic motives to this corpulent fellow, dragging his ample beltline through the slush? Finally the track enters a pile of driftwood, and does not emerge. I hear the tinkle of dripping water among the logs, and I fancy the skunk hears it too. I turn homeward, still wondering.

February

Good Oak

There are two spiritual dangers in not owning a farm. One is the danger of supposing that breakfast comes from the grocery, and the other that heat comes from the furnace.

To avoid the first danger, one should plant a garden, preferably where there is no grocer to confuse the issue.

To avoid the second, he should lay a split of good oak on the andirons, preferably where there is no furnace, and let it warm his shins while a February blizzard tosses the trees outside. If one has cut, split, hauled, and piled his own good oak, and let his mind work the while, he will remember much about where the heat comes from, and with a wealth of detail denied to those who spend the week end in town astride a radiator.

The particular oak now aglow on my andirons grew on the bank of the old emigrant road where it climbs the sandhill. The stump, which I measured upon felling the tree, has a diameter of 30 inches. It shows 80 growth rings, hence the seedling from which it originated must have laid its first ring of wood in 1865, at the end of the Civil War. But I know from the history of present seedlings that no oak grows above the reach of rabbits without a decade or more of getting girdled each winter, and re-sprouting during the following summer. Indeed, it is all too clear that every surviving oak is the product either of rabbit negligence or of rabbit scarcity. Some day some patient botanist will draw a frequency curve of oak birthyears, and show that the curve humps every ten years, each hump originating from a low in the ten year rabbit cycle. (A fauna and flora, by this very process of perpetual battle within and among species, achieve collective immortality.)

It is likely, then, that a low in rabbits occurred in the middle 'sixties, when my oak began to lay on annual rings, but that the acorn that produced it fell during the preceding decade, when the covered wagons were still passing over my road into the Great Northwest. It may have been the wash and wear of the emigrant traffic that bared this roadbank, and thus enabled this particular acorn to spread its first leaves to the sun. Only one acorn in a thousand ever grew large enough to fight rabbits; the rest were drowned at birth in the prairie sea.

It is a warming thought that this one wasn't, and thus lived to garner eighty years of June sun. It is this sunlight that is now being released, through the intervention of my axe and saw, to warm my shack and my spirit through eighty gusts of blizzard. And with each gust a wisp of smoke from my chimney bears witness, to whomsoever it may concern, that the sun did not shine in vain.

My dog does not care where heat comes from, but he cares ardently that it come, and soon. Indeed he considers my ability to make it come as something magical, for when I rise in the cold black pre-dawn and kneel shivering by the hearth making a fire, he pushes himself blandly between me and the kindling splits I have laid on the ashes, and I must touch a match to them by poking it between his legs. Such faith, I suppose, is the kind that moves mountains.

It was a bolt of lightning that put an end to woodmaking by this particular oak. We were all awakened, one night in July, by the thunderous crash; we realized that the bolt must have hit near by, but, since it had not hit us, we all went back to sleep. Man brings all

things to the test of himself, and this is notably true of lightning.

Next morning, as we strolled over the sandhill rejoicing with the cone-flowers and the prairie clovers over their fresh accession of rain, we came upon a great slab of bark freshly torn from the trunk of the roadside oak. The trunk showed a long spiral scar of barkless sapwood, a foot wide and not yet yellowed by the sun. By the next day the leaves had wilted, and we knew that the lightning had bequeathed to us three cords of prospective fuel wood.

We mourned the loss of the old tree, but knew that a dozen of its progeny standing straight and stalwart on the sands had already taken over its job of woodmaking.

We let the dead veteran season for a year in the sun it could no longer use, and then on a crisp winter's day we laid a newly filed saw to its bastioned base. Fragrant little chips of history spewed from the saw cut, and accumulated on the snow before each kneeling sawyer. We sensed that these two piles of sawdust were something more than wood: that they were the integrated transect of a century; that our saw was biting its way, stroke by stroke, decade by decade, into the chronology of a lifetime, written in concentric annual rings of good oak.

It took only a dozen pulls of the saw to transect the few years of our ownership, during which we had learned to love and cherish this farm. Abruptly we began to cut the years of our predecessor the bootlegger, who hated this farm, skinned it of residual fertility, burned its farmhouse, threw it back into the lap of the County (with delin-quent taxes to boot), and then disappeared among the landless anonymities of the Great Depression. Yet the oak had laid down good wood for him; his sawdust was as fragrant, as sound, and as pink as our own. An oak is no respecter of persons.

The reign of the bootlegger ended sometime during the dust-bowl drouths of 1936, 1934, 1933, and 1930. Oak smoke from his still and peat from burning marshlands must have clouded the sun in those years, and alphabetical conservation was abroad in the land, but the sawdust shows no change.

Rest! cries the chief sawyer, and we pause for breath.

Now our saw bites into the 1920's, the Babbittian decade when everything grew bigger and better in heedlessness and arrogance——until 1929,when stock markets crumpled. If the oak heard them fall, its wood gives no sign. Nor did it heed the Legislature's several protestations of love for trees: a National Forest and a forest-crop law in 1927, a great refuge on the Upper Mississippi bottomlands in 1924, and a new forest policy in 1921. Neither did it notice the demise of the state's last marten in 1925,nor the arrival of its first starling in 1923.

In March 1922, the 'Big Sleet' tore the neighboring elms limb from limb, but there is no sign of damage to our tree. What is a ton of ice, more or less, to a good oak?

Rest! cries the chief sawyer, and we pause for breath.

Now the saw bites into 1910–20,the decade of the drainage dream, when steam shovels sucked dry the marshes of central Wisconsin to make farms, and made ash-heaps instead. Our marsh escaped, not because of any caution or forbearance among engineers, but because the river floods it each April, and did so with a vengeance——perhaps a defensive vengeance——in the years 1913–16. The oak laid on wood just the same, even in 1915, when the Supreme Court abolished the state forests and Governor Phillip pontificated that 'state forestry is not a good business proposition.' (It did not occur to the Governor that there might be more than one definition of what is good, and even of what is business. It did not occur to him that while the courts were writing one definition of goodness in the law books, fires were writing quite another one on the face of the land. Perhaps, to be a governor, one must be free from doubt on such matters.)

While forestry receded during this decade, game conservation advanced. In 1916 pheasants became success-fully established in Waukesha County; in 1915 a federal law prohibited spring shooting; in 1913 a state game farm was started; in 1912 a 'buck law' protected female deer; in 1911 an epidemic of refuges spread over the state. 'Refuge' became a holy word, but the oak took no heed.

Rest! cries the chief sawyer, and we pause for breath.

Now we cut 1910, when a great university president published a book on conservation, a great sawfly epidemic killed millions of tamaracks, a great drouth burned the pineries, and a great dredge drained Horicon Marsh.

We cut 1909, when smelt were first planted in the Greak Lakes, and when a wet summer induced the Legislature to cut the forest-fire appropriations.

We cut 1908, a dry year when the forests burned fiercely, and Wisconsin parted with its last cougar.

We cut 1907, when a wandering lynx, looking in the wrong direction for the promised land, ended his career among the farms of Dane County.

We cut 1906,when the first state forester took office, and fires burned 17,000 acres in these sand counties; we cut 1905 when a great flight of goshawks came out of the North and ate up the local grouse (they no doubt perched in this tree to eat some of mine). We cut 1902–3, a winter of bitter cold; 1901,which brought the most intense drouth of record (rainfall only 17 inches); 1900, a centennial year of hope, of prayer, and the usual annual ring of oak.

Rest! cries the chief sawyer, and we pause for breath.

Now our saw bites into the 1890's, called gay by those whose eyes turn cityward rather than landward. We cut 1899, when the last passenger pigeon collided with a charge of shot near Babcock, two counties to the north; we cut 1898 when a dry fall, followed by a snowless winter,

froze the soil seven feet deep and killed the apple trees; 1897, another drouth year, when another forestry commission came into being; 1896, when 25,000 prairie chickens were shipped to market from the village of Spooner alone; 1895, another year of fires; 1894, another drouth year: and 1893, the year of 'The Bluebird Storm,' when a March blizzard reduced the migrating bluebirds to near-zero. (The first bluebirds always alighted in this oak, but in the middle 'nineties it must have gone without.) We cut 1892, another year of fires; 1891, a low in the grouse cycle; and 1890, the year of the Babcock Milk Tester, which enabled Governor Heil to boast, half a century later, that Wisconsin is America's Dairyland. The motor licenses which now parade that boast were then not foreseen, even by Professor Babcock.

It was likewise in 1890 that the largest pine rafts in history slipped down the Wisconsin River in full view of my oak, to build an empire of red barns for the cows of the prairie states. Thus it is that good pine now stands between the cow and the blizzard, just as good oak stands between the blizzard and me.

Rest! cries the chief sawyer, and we pause for breath.

Now our saw bites into the 1880's; into 1889, a drouth year in which Arbor Day was first proclaimed; into 1887, when Wisconsin appointed its first game wardens; into 1886, when the College of Agriculture held its first short course for farmers; into 1885, preceded by a winter 'of unprecedented length and severity'; into 1883, when Dean W. H. Henry reported that the spring flowers at Madison bloomed 13 days later than average; into 1882, the year Lake Mendota opened a month late following the historic 'Big Snow' and bitter cold of 1881–2.

It was likewise in 1881 that the Wisconsin Agricultural Society debated the question, 'How do you account for the second growth of black oak timber that has sprung up all over the country in the last thirty years?' My oak was one of these. One debater claimed spontaneous generation, another claimed regurgitation of acorns by southbound pigeons.

Rest! cries the chief sawyer, and we pause for breath.

Now our saw bites the 1870's, the decade of Wisconsin's carousal in wheat. Monday morning came in 1879, when chinch bugs, grubs, rust, and soil exhaustion finally convinced Wisconsin farmers that they could not compete with the virgin prairies further west in the game of wheating land to death. I suspect that this farm played its share in the game, and that the sand blow just north of my oak had its origin in over-wheating.

This same year of 1879 saw the first planting of carp in Wisconsin, and also the first arrival of quackgrass as a stowaway from Europe. On 27 October 1879, six migrating prairie chickens perched on the rooftree of the German Methodist Church in Madison, and took a look at the growing city. On 8 November the markets at Madison were reported to be glutted with ducks at 10 cents each.

In 1878 a deer hunter from Sauk Rapids remarked prophetically, 'The hunters promise to outnumber the deer.'

On 10 September 1877, two brothers, shooting Muskego Lake, bagged 210 blue-winged teal in one day.

In 1876 came the wettest year of record; the rainfall piled up 50 inches. Prairie chickens declined, perhaps owing to hard rains.

In 1875 four hunters killed 153 prairie chickens at York Prairie, one county to the eastward. In the same year the U.S. Fish Commission planted Atlantic salmon in Devil's Lake, 10 miles south of my oak.

In 1874 the first factory-made barbed wire was stapled to oak trees; I hope no such artifacts are buried in the oak now under saw!

In 1873 one Chicago firm received and marketed 25,000 prairie chickens. The Chicago trade collectively bought 600,000 at $ 3.25 per dozen.

In 1872 the last wild Wisconsin turkey was killed, two counties to the southwest.

It is appropriate that the decade ending the pioneer carousal in wheat should likewise have ended the pioneer carousal in pigeon blood. In 1871, within a 50-mile triangle spreading northwestward from my oak, 136 million pigeons are estimated to have nested, and some may have nested in it, for it was then a thrifty sapling 20 feet tall. Pigeon hunters by scores plied their trade with net and gun, club and salt lick, and trainloads of prospective pigeon pie moved southward and eastward toward the cities. It was the last big nesting in Wisconsin, and nearly the last in any state.

This same year 1871 brought other evidence of the march of empire: the Peshtigo Fire, which cleared a couple of counties of trees and soil, and the Chicago Fire, said to have started from the protesting kick of a cow.

In 1870 the meadow mice had already staged their march of empire; they ate up the young orchards of the young state, and then died. They did not eat my oak, whose bark was already too tough and thick for mice.

It was likewise in 1870 that a market gunner boasted in the American Sportsman of killing 6000 ducks in one season near Chicago.

Rest! cries the chief sawyer, and we pause for breath.

Our saw now cuts the 1860's, when thousands died to settle the question: Is the man-man community lightly to be dismembered? They settled it, but they did not see, nor do we yet see, that the same question applies to the man-land community.

This decade was not without its gropings toward the larger issue. In 1867 Increase A. Lapham induced the State Horticultural Society to offer prizes for forest plantations. In 1866 the last native Wisconsin elk was killed. The saw now severs 1865, the pithyear of our

oak. In that year John Muir offered to buy from his brother, who then owned the home farm thirty miles east of my oak, a sanctuary for the wildflowers that had gladdened his youth. His brother declined to part with the land, but he could not suppress the idea: 1865 still stands in Wisconsin history as the birthyear of mercy for things natural, wild, and free.

We have cut the core. Our saw now reverses its orientation in history; we cut backward across the years, and outward toward the far side of the stump. At last there is a tremor in the great trunk; the sawkerf suddenly widens; the saw is quickly pulled as the sawyers spring backward to safety; all hands cry 'Timber!'; my oak leans, groans, and crashes with earth-shaking thunder, to lie prostrate across the emigrant road that gave it birth.

Now comes the job of making wood. The maul rings on steel wedges as the sections of trunk are upended one by one, only to fall apart in fragrant slabs to be corded by the roadside.

There is an allegory for historians in the diverse functions of saw, wedge, and axe.

The saw works only across the years, which it must deal with one by one, in sequence. From each year the raker teeth pull little chips of fact, which accumulate in little piles, called sawdust by woodsmen and archives by historians; both judge the character of what lies within by the character of the samples thus made visible without. It is not until the transect is completed that the tree falls, and the stump yields a collective view of a century. By its fall the tree attests the unity of the hodge-podge called history.

The wedge, on the other hand, works only in radial splits; such a split yields a collec-tive view of all the years at once, or no view at all, depending on the skill with which the plane of the split is chosen. (If in doubt, let the section season for a year until a crack develops. Many a hastily driven wedge lies rusting in the woods, embedded in unsplittable cross-grain.)

The axe functions only at an angle diagonal to the years, and this only for the periph-eral rings of the recent past. Its special function is to lop limbs, for which both saw and wedge are useless.

The three tools are requisite to good oak, and to good history.

These things I ponder as the kettle sings, and the good oak burns to red coals on white ashes. Those ashes, come spring, I will return to the orchard at the foot of the sandhill. They will come back to me again, perhaps as red apples, or perhaps as a spirit of enterprise in some fat October squirrel, who, for reasons unknown to himself, is bent on planting acorns.

March

The Geese Return

One swallow does not make a summer, but one skein of geese, cleaving the murk of a

March thaw, is the spring.

A cardinal, whistling spring to a thaw but later finding himself mistaken, can retrieve his error by resuming his winter silence. A chipmunk, emerging for a sunbath but finding a blizzard, has only to go back to bed. But a migrating goose, staking two hundred miles of black night on the chance of finding a hole in the lake, has no easy chance for retreat. His arrival carries the conviction of a prophet who has burned his bridges.

A March morning is only as drab as he who walks in it without a glance skyward, ear cocked for geese. I once knew an educated lady, banded by Phi Beta Kappa, who told me that she had never heard or seen the geese that twice a year proclaim the revolving seasons to her well-insulated roof. Is education possibly a process of trading awareness for things of lesser worth? The goose who trades his is soon a pile of feathers.

The geese that proclaim the seasons to our farm are aware of many things, including the Wisconsin statutes. The southbound November flocks pass over us high and haughty, with scarcely a honk of recognition for their favorite sandbars and sloughs. 'As a crow flies' is crooked compared with their undeviating aim at the nearest big lake twenty miles to the south, where they loaf by day on broad waters and filch corn by night from the freshly cut stubbles. November geese are aware that every marsh and pond bristles from dawn till dark with hopeful guns.

March geese are a different story. Although they have been shot at most of the winter, as attested by their buckshot-battered pinions, they know that the spring truce is now in effect. They wind the oxbows of the river, cutting low over the now gunless points and islands, and gabbling to each sandbar as to a longlost friend. They weave low over the marshes and meadows, greeting each newly melted puddle and pool. Finally, after a few proforma circlings of our marsh, they set wing and glide silently to the pond, black landing-gear lowered and rumps white against the far hill. Once touching water, our newly arrived guests set up a honking and splashing that shakes the last thought of winter out of the brittle cattails. Our geese are home again!

It is at this moment of each year that I wish I were a muskrat, eye-deep in the marsh.

Once the first geese are in, they honk a clamorous invitation to each migrating flock, and in a few days the marsh is full of them. On our farm we measure the amplitude of our spring by two yardsticks: the number of pines planted, and the number of geese that stop. Our record is 642 geese counted in on 11 April 1946.

As in fall, our spring geese makes daily trips to corn, but these are no surreptitious sneakings-out by night; the flocks move noisily to and from corn stubbles through the day. Each departure is preceded by loud gustatory debate, and each return by an even louder one. The returning flocks, once thoroughly at home, omit their proforma circlings of the

marsh. They tumble out of the sky like maple leaves, side-slipping right and left to lose altitude, feet spraddled toward the shouts of welcome below. I suppose the ensuing gabble deals with the merits of the day's dinner. They are now eating the waste corn that the snow blanket has protected over winter from corn-seeking crows, cottontails, meadow mice, and pheasants.

It is a conspicuous fact that the corn stubbles selected by geese for feeding are usually those occupying former prairies. No man knows whether this bias for prairie corn reflects some superior nutritional value, or some ancestral tradition transmitted from generation to generation since the prairie days. Perhaps it reflects the simpler fact that prairie cornfields tend to be large. If I could understand the thunderous debates that precede and follow these daily excursions to corn, I might soon learn the reason for the prairiebias. But I cannot, and I am well content that it should remain a mystery. What a dull world if we knew all about geese!

In thus watching the daily routine of a spring goose convention, one notices the prevalence of singles—lone geese that do much flying about and much talking. One is apt to impute a disconsolate tone to their honkings, and to jump to the conclusion that they are broken-hearted widowers, or mothers hunting lost children. The seasoned ornithologist knows, however, that such subjective interpretation of bird behavior is risky. I long tried to keep an open mind on the question.

After my students and I had counted for half a dozen years the number of geese comprising a flock, some unexpected light was cast on the meaning of lone geese. It was found by mathematical analysis that flocks of six or multiples of six were far more frequent than chance alone would dictate. In other words, goose flocks are families, or aggregations of families, and lone geese in spring are probably just what our fond imaginings had first suggested. They are bereaved survivors of the winter's shooting, searching in vain for their kin. Now I am free to grieve with and for the lone honkers.

It is not often that cold-potato mathematics thus confirms the sentimental promptings of the bird-lover.

On April nights when it has become warm enough to sit outdoors, we love to listen to the proceedings of the convention in the marsh. There are long periods of silence when one hears only the winnowing of snipe, the hoot of a distant owl, or the nasal clucking of some amorous coot. Then, of a sudden, a strident honk resounds, and in an instant pandemonium echoes. There is a beating of pinions on water, a rushing of dark prows propelled by churning paddles, and a general shouting by the onlookers of a vehement controversy. Finally some deep honker has his last word, and the noise subsides to that half-audible small-talk that seldom ceases among geese. Once again, I would I were a muskrat!

By the time the pasques are in full bloom our goose-convention dwindles, and before May our marsh is once again a mere grassy wetness, enlivened only by redwings and rails.

It is an irony of history that the great powers should have discovered the unity of nations at Cairo in 1943. The geese of the world have had that notion for a longer time, and each March they stake their lives on its essential truth.

In the beginning there was only the unity of the Ice Sheet. Then followed the unity of the March thaw, and the northward hegira of the international geese. Every March since the Pleistocene, the geese have honked unity from China Sea to Siberian Steppe, from Euphrates to Volga, from Nine to Murmansk, from Lincolnshire to Spitsbergen. Every March since the Pleistocene, the geese have honked unity from Currituck to Labrador, Matamuskeet to Ungava, Horseshoe Lake to Hudson's Bay, Avery Island to Baffin Land, Panhandle to Mackenzie, Sacramento to Yukon.

By this international commerce of geese, the waste corn of Illinois is carried through the clouds of the Arctic tundras, there to combine with the waste sunlight of a nightless June to grow goslings for all the lands between. And in this annual barter of food for light, and winter warmth for summer solitude, the whole continent receives as net profit a wild poem dropped from the murky skies upon the muds of March.

April

Come High Water

The same logic that causes big rivers always to flow past big cities causes cheap farms sometimes to be marooned by spring floods. Ours is a cheap farm, and sometimes when we visit it in April we get marooned.

Not intentionally, of course, but one can, to a degree, guess from weather reports when the snows up north will melt, and one can estimate how many days it takes for the flood to run the gauntlet of upriver cities. Thus, come Sunday evening, one must go back to town and work, but one can't. How sweetly the spreading waters murmur condolence for the wreckage they have inflicted on Monday morning dates! How deep and chesty the honkings of the geese as they cruise over cornfield after cornfield, each in process of becoming a lake. Every hundred yards some new goose flails the air as he struggles to lead the echelon in its morning survey of this new and watery world.

The enthusiasm of geese for high water is a subtle thing, and might be overlooked by those unfamiliar with goose-gossip, but the enthusiasm of carp is obvious and unmistakable. No sooner has the rising flood wetted the grass roots than here they come, rooting and

wallowing with the prodigious zest of pigs turned out to pasture, flashing red tails and yellow bellies, cruising the wagon tracks and cow-paths, and shaking the reeds and bushes in their haste to explore what to them is an expanding universe.

Unlike the geese and the carp, the terrestrial birds and mammals accept high water with philosophical detachment. A cardinal atop a river birch whistles loudly his claim to a territory that, but for the trees, cannot be seen to exist. A ruffed grouse drums from the flooded woods; he must be perched on the high end of his highest drumming log. Meadow-mice paddle ridgeward with the calm assurance of miniature muskrats. From the orchard bounds a deer, evicted from his usual daytime bed in the willow thickets. Everywhere are rabbits, calmly accepting quarters on our hill, which serves, in Noah's absence, for an ark.

The spring flood brings us more than high adventure; it brings likewise an unpredictable miscellany of floatable objects pilfered from upriver farms. An old board stranded on our meadow has, to us, twice the value of the same piece new from the lumberyard. Each old board has its own individual history, always unknown, but always to some degree guessable from the kind of wood, its dimensions, its nails, screws, or paint, its finish or the lack of it, its wear or decay. One can even guess, from the abrasion of its edges and ends on sandbars, how many floods have carried it in years past.

Our lumber pile, recruited entirely from the river, is thus not only a collection of personalities, but an anthology of human strivings in upriver farms and forests. The autobiography of an old board is a kind of literature not yet taught on campuses, but any riverbank farm is a library where he who hammers or saws may read at will. Come high water, there is always an accession of new books.

There are degrees and kinds of solitude. An island in a lake has one kind; but lakes have boats, and there is always the chance that one might land to pay you a visit. A peak in the clouds has another kind; but most peaks have trails, and trails have tourists. I know of no solitude so secure as one guarded by a spring flood; nor do the geese, who have seen more kinds and degrees of aloneness than I have.

So we sit on our hill beside a new-blown pasque, and watch the geese go by. I see our road dipping gently into the waters, and I conclude (with inner glee but exterior detachment) that the question of traffic, in or out, is for this day at least, debatable only among carp.

Draba

Within a few weeks now Draba, the smallest flower that blows, will sprinkle every sandy place with small blooms.

He who hopes for spring with upturned eye never sees so small a thing as Draba. He who despairs of spring with downcast eye steps on it, unknowing. He who searches for

spring with his knees in the mud finds it, in abundance.

Draba asks, and gets, but scant allowance of warmth and comfort; it subsists on the leavings of unwanted time and space. Botany books give it two or three lines, but never a plate or portrait. Sand too poor and sun too weak for bigger, better blooms are good enough for Draba. After all it is no spring flower, but only a postscript to a hope.

Draba plucks no heartstrings. Its perfume, if there is any, is lost in the gusty winds. Its color is plain white. Its leaves wear a sensible woolly coat. Nothing eats it; it is too small. No poets sing of it. Some botanist once gave it a Latin name, and then forgot it. Altogether it is of no importance—just a small creature that does a small job quickly and well.

Bur Oak

When school children vote on a state bird, flower or tree, they are not making a decision; they are merely ratifying history. Thus history made bur oak the characteristic tree of southern Wisconsin when the prairie grasses first gained possession of the region. Bur oak is the only tree that can stand up to a prairie fire and live.

Have you ever wondered why a thick crust of corky bark covers the whole tree, even to the smallest twigs? This cork is armor. Bur oaks were the shock troops sent by the invading forest to storm the prairie; fire is what they had to fight. Each April, before the new grasses had covered the prairie with unburnable greenery, fires ran at will over the land, sparing only such old oaks as had grown bark too thick to scorch. Most of these groves of scattered veterans, known to the pioneers as 'oak openings,' consisted of bur oaks.

Engineers did not discover insulation; they copied it from these old soldiers of the prairie war. Botanists can read the story of that war for twenty thousand years. The record consists partly of pollen grains embedded in peats, partly of relic plants interned in the rear of the battle, and there forgotten. The record shows that the forest front at times retreated almost to Lake Superior; at times it advanced far to the south. At one period it advanced so far southward that spruce and other 'rear guard' species grew to and beyond the southern border of Wisconsin; spruce pollen appears at a certain level in all peat bogs of the region. But the average battle line between prairie and forest was about where it is now, and the net outcome of the battle was a draw.

One reason for this was that there were allies that threw their support first to one side, then to the other. Thus rabbits and mice mowed down the prairie herbs in summer, and in winter girdled any oak seedlings that survived the fires. Squirrels planted acorns in fall, and ate them all the rest of the year. June beetles undermined the prairie sod in their grub stage, but defoliated the oaks in their adult stage. But for this geeing and hawing of allies, and hence of the victory, we should not have today that rich mosaic of prairie and forest soils

which looks so decorative on a map.

Jonathan Carver has left us a vivid word picture of the prairie border in pre-settlement days. On 10 October 1763, he visited Blue Mounds, a group of high hills (now wooded) near the southwestern corner of Dane County. He says:

I ascended one of the highest of these, and had an extensive view of the country. For many miles nothing was to be seen but lesser mountains, which appeared at a distance like haycocks, they being free from trees. Only a few groves of hickory, and stunted oaks, covered some of the vallies.

In the 1840's a new animal, the settler, intervened in the prairie battle. He didn't mean to, he just plowed enough fields to deprive the prairie of its immemorial ally: fire. Seedling oaks forthwith romped over the grass-lands in legions, and what had been the prairie region became a region of woodlot farms. If you doubt this story, go count the rings on any set of stumps on any 'ridge' woodlot in southwest Wisconsin. All the trees except the oldest veterans date back to the 1850's and the 1860's, and this was when fires ceased on the prairie.

John Muir grew up in Marquette County during this period when new woods overrode the old prairies and engulfed the oak openings in thickets of saplings. In his Boyhood and Youth he recalls that:

The uniformly rich soil of the Illinois and Wisconsin prairies produced so close and tall a growth of grasses for fires that no tree could live on it. Had there been no fires, these fine prairies, so marked a feature of the country, would have been covered by the heaviest forest. As soon as the oak openings were settled, and the farmers had prevented running grass-fires, the grubs [roots] grew up into trees and formed tall-thickets so dense that it was difficult to walk through them, and every trace of the sunny [oak] 'openings' vanished.

Thus, he who owns a veteran bur oak owns more than a tree. He owns a historical library, and a reserved seat in the theater of evolution. To the discerning eye, his farm is labeled with the badge and symbol of the prairie war.

Sky Dance

I owned my farm for two years before learning that the sky dance is to be seen over my woods every evening in April and May. Since we discovered it, my family and I have been reluctant to miss even a single performance.

The show begins on the first warm evening in April at exactly 6:50 p.m. The curtain goes up one minute later each day until 1 June, when the time is 7:50. This sliding scale is dictated by vanity, the dancer demanding a romantic light intensity of exactly 0.05 foot-

candles. Do not be late, and sit quietly, lest he fly away in a huff.

The stage props, like the opening hour, reflect the temperamental demands of the performer. The stage must be an open amphitheater in woods or brush, and in its center there must be a mossy spot, a streak of sterile sand, a bare outcrop of rock, or a bare roadway. Why the male woodcock should be such a stickler for a bare dance floor puzzled me at first, but I now think it is a matter of legs. The woodcock's legs are short, and his struttings cannot be executed to advantage in dense grass or weeds, nor could his lady see them there. I have more woodcocks than most farmers because I have more mossy sand, too poor to support grass.

Knowing the place and the hour, you seat yourself under a bush to the east of the dance floor and wait, watching against the sunset for the woodcock's arrival. He flies in low from some neighboring thicket, alights on the bare moss, and at once begins the overture: a series of queer throaty peents spaced about two seconds apart, and sounding much like the summer call of the nighthawk.

Suddenly the peenting ceases and the bird flutters skyward in a series of wide spirals, emitting a musical twitter. Up and up he goes, the spirals steeper and smaller, the twittering louder and louder, until the performer is only a speck in the sky. Then, without warning, he tumbles like a crippled plane, giving voice in a soft liquid warble that a March bluebird might envy. At a few feet from the ground he levels off and returns to his peenting ground, usually to the exact spot where the performance began, and there resumes his peenting.

It is soon too dark to see the bird on the ground, but you can see his flights against the sky for an hour, which is the usual duration of the show. On moonlight nights, however, it may continue, an intervals, as long as the moon continues to shine.

At daybreak the whole show is repeated. In early April the final curtain falls at 5:15 a. m.; the time advances two minutes a day until June, when the performance closes for the year at 3:15. Why the disparity in sliding scale? Alas, I fear that even romance tires, for it takes only a fifth as much light to stop the sky dance at dawn as suffices to start it at sunset.

It is fortunate, perhaps, that no matter how intently one studies the hundred little dramas of the woods and meadows, one can never learn all of the salient facts about any one of them. What I do not yet know about the sky dance is: where is the lady, and just what part, if any, does she play? I often see two woodcocks on a peenting ground, and the two sometimes fly together, but they never peent together. Is the second bird the hen, or a rival male?

Another unknown: is the twitter vocal, or is it mechanical? My friend, Bill Feeney, once clapped a net over a peenting bird and removed his outer primary wing feathers; thereafter the bird peented and warbled, but twittered no more. But one such experiment is hardly conclusive.

Another unknown: up to what stage of nesting does the male continue the sky dance? My daughter once saw a bird peenting within twenty yards of a nest containing hatched eggshells, but was this his lady's nest? Or is this secretive fellow possibly bigamous without our ever having found it out? These, and many other questions, remain mysteries of the deepening dusk.

The drama of the sky dance is enacted nightly on hundreds of farms, the owners of which sigh for entertainment, but harbor the illusion that it is to be sought in theaters. They live on the land, but not by the land.

The woodcock is a living refutation of the theory that the utility of a game bird is to serve as a target, or to pose gracefully on a slice of toast. No one would rather hunt woodcock in October than I, but since learning of the sky dance I find myself calling one or two birds enough. I must be sure that, come April, there be no dearth of dancers in the sunset sky.

May

Back from the Argentine

When dandelions have set the mark of May on Wisconsin pastures, it is time to listen for the final proof of spring. Sit down on a tussock, cock your ears at the sky, dial out the bedlam of meadowlarks and redwings, and soon you may hear it: the flight-song of the upland plover, just now back from the Argentine.

If your eyes are strong, you may search the sky and see him, wings aquiver, circling among the woolly clouds. If your eyes are weak, don't try it, just watch the fence posts. Soon a flash of silver will tell you on which post the plover has alighted and folded his long wings. Whoever invented the word 'grace' must have seen the wing-folding of the plover.

There he sits; his whole being says it's your next move to absent yourself from his domain. The county records may allege that you own this pasture, but the plover airily rules out such trivial legalities. He has just flown 4000 miles to reassert the title he got from the Indians, and until the young plovers are awing, this pasture is his, and none may trespass without his protest.

Somewhere near by, the hen plover is brooding the four large pointed eggs which will shortly hatch four precocial chicks. From the moment their down is dry, they scamper through the grass like mice on stilts, quite able to elude your clumsy efforts to catch them. At thirty days the chicks are full grown; no other fowl develops with equal speed. By August they have graduated from flying school, and on cool August nights you can hear their

whistled signals as they set wing for the pampas, to prove again the age-old unity of the Americas. Hemisphere solidarity is new among statesmen, but not among the feathered navies of the sky.

The upland plover fits easily into the agricultural countryside. He follows the black-and-white buffalo, which now pasture his prairies, and finds them an acceptable substitute for brown ones. He nests in hayfields as well as pastures, but, unlike the clumsy pheasant, does not get caught in hay mowers. Well before the hay is ready to cut, the young plovers are a-wing and away. In farm country, the plover has only two real enemies: the gully and the drainage ditch. Perhaps we shall one day find that these are our enemies, too.

There was a time in the early 1900's when Wisconsin farms nearly lost their immemorial timepiece, when May pastures greened in silence, and August nights brought no whistled reminder of impending fall. Universal gunpowder, plus the lure of plover-on-toast for post-Victorian banquets, had taken too great a toll. The belated protection of the federal migratory bird laws came just in time.

June

The Alder Fork — A Fishing Idyl

We found the main stream so low that the teeter-snipe pattered about in what last year were trout riffles, and so warm that we could duck in its deepest pool without a shout. Even after our cooling swim, waders felt like hot tar paper in the sun.

The evening's fishing proved as disappointing as its auguries. We asked that stream for trout, and it gave us a chub. That night we sat under a mosquito smudge and debated the morrow's plan. Two hundred miles of hot, dusty road we had come, to feel again the impetuous tug of a disillusioned brook or rainbow. There were no trout.

But this, we now remembered, was a stream of parts. High up near the headwaters we had once seen a fork, narrow, deep, and fed by cold springs that gurgled out under its close-hemmed walls of alder. What would a self-respecting trout do in such weather? Just what we did: go up.

In the fresh of the morning, when a hundred whitethroats had forgotten it would ever again be anything but sweet and cool, I climbed down the dewy bank and stepped into the Alder Fork. A trout was rising just upstream. I paid out some line——wishing it would always stay thus soft and dry——and, measuring the distance with a false cast or two, laid down a spent gnat exactly a foot above his last swirl. Forgotten now were the hot miles, the mosquitoes, the ignominious chub. He took it with one great gulp, and shortly I could hear

him kicking in the bed of wet alder leaves at the bottom of the creel.

Another, albeit larger, fish had meanwhile risen in the next pool, which lay at the very 'head of navigation,' for at its upper end the alders closed in solid phalanx. One bush, with its brown stem laved in the middle current, shook with a perpetual silent laughter, as if to mock at any fly that gods or men might cast one inch beyond its outermost leaf.

For the duration of a cigarette I sit on a rock midstream—and watch my trout rise under his guardian bush, while my rod and line hang drying on the alders of the sunny bank. Then—for prudence' sake—a little longer. That pool is too smooth up there. A breeze is stirring and may shortly ruffle it for an instant, and thus make more deadly that perfect cast I shall shortly lay upon its bosom.

It will come—a puff strong enough to shake a brown miller off the laughing alder, and cast it upon the pool.

Ready now! Coil up the dry line and stand midstream, rod in instant readiness. It's coming—a little premonitory shiver in that aspen on the hill lets me get out half a cast, and swish it gently back and forth, ready for the main puff to hit the pool. No more than half a line, mind you! The sun is high now, and any flicking shadow overhead would forewarn my hunker of his impending fate. Now! The last three yards shoot out, the fly falls gracefully at the feet of the laughing alder—he has it! I set hard to hold him out of the jungle beyond. He rushes downstream. In a few minutes he, too, is kicking in the creel.

I sit in happy meditation on my rock, pondering, while my line dries again, upon the ways of trout and men. How like fish we are: ready, nay eager, to seize upon whatever new thing some wind of circumstance shakes down upon the river of time! And how we rue our haste, finding the gilded morsel to contain a hook. Even so, I think there is some virtue in eagerness, whether its object prove true or false. How utterly dull would be a wholly prudent man, or trout, or world! Did I say a while ago that I waited 'for prudence' sake'? That was not so. The only prudence in fishermen is that designed to set the stage for taking yet another, and perhaps a longer, chance.

Time to be at it now—they will soon stop rising. I wade waist deep to head of navigation, poke my head insolently into the shaking alder, and look within. Jungle is right! A coal-black hole above, so canopied in greenness you could not wave a fern, much less a rod, above its rushing depths. And there, almost rubbing his ribs against the dark bank, a great trout rolls lazily over as he sucks down a passing bug.

Not a chance to stalk him, even with the lowly worm. But twenty yards above I see bright sunshine on the water—another opening. Fish a dry fly downstream? It cannot, but it must, be done.

I retreat and climb the bank. Neck deep in jewelweed and nettles, I detour through the

alder thicket to the opening above. With cat-like care not to roil his majesty's bath, I step in, and stand stock-still for five minutes to let things calm down. The while, I strip out, oil, dry, and coil upon my left hand thirty feet of line. I am that far above the portal to the jungle.

Now for the long chance! I blow upon my fly to give it one last fluff, lay it on the stream at my feet, and quickly pay out coil after coil. Then, just as the line straightens out and the fly is sucked into the jungle, I walk quickly downstream, straining my eyes into the dark vault to follow its fortunes. A fleeting glimpse or two as it passes a speck of sunlight shows it still rides clear. It rounds the bend. In no time—long before the roil of my walking has betrayed the ruse—it reaches the black pool. I hear, rather than see, the rush of the great fish; I set hard, and the battle is on.

No prudent man would risk a dollar's worth of fly and leader pulling a trout upstream through the giant tooth-brush of alder stems comprising the bend of that creek. But, as I said, no prudent man is a fisherman. By and by, with much cautious unraveling, I got him up into open water, and finally aboard the creel.

I shall now confess to you that none of those three trout had to be beheaded, or folded double, to fit their casket. What was big was not the trout, but the chance. What was full was not my creel, but my memory. Like the white-throats, I had forgotten it would ever again be aught but morning on the Fork.

July

Great Possessions

One hundred and twenty acres, according to the County Clerk, is the extent of my worldly domain. But the County Clerk is a sleepy fellow, who never looks at his record books before nine o'clock. What they would show at daybreak is the question here at issue.

Books or no books, it is a fact, patent both to my dog and myself, that at daybreak I am the sole owner of all the acres I can walk over. It is not only boundaries that disappear, but also the thought of being bounded. Expanses unknown to deed or map are known to every dawn, and solitude, supposed no longer to exist in my county, extends on every hand as far as the dew can reach.

Like other great landowners, I have tenants. They are negligent about rents, but very punctilious about tenures. Indeed at every daybreak from April to July they proclaim their boundaries to each other, and so acknowledge, at least by inference, their fiefdom to me.

This daily ceremony, contrary to what you might suppose, begins with the utmost

decorum. Who originally laid down its protocols I do not know. At 3:30 a.m., with such dignity as I can muster of a July morning, I step from my cabin door, bearing in either hand my emblems of sovereignty, a coffee pot and notebook. I seat myself on a bench, facing the white wake of the morning star. I set the pot beside me. I extract a cup from my shirt front, hoping none will notice its informal mode of transport. I get out my watch, pour coffee, and lay notebook on knee. This is the cue for the proclamations to begin.

At 3:35 the nearest field sparrow avows, in a clear tenor chant, that he holds the jackpine copse north to the riverbank, and south to the old wagon track. One by one all the other field sparrows within earshot recite their respective holdings. There are no disputes, at least at this hour, so I just listen, hoping inwardly that their womenfolk acquiesce in this happy accord over the status quo ante.

Before the field sparrows have quite gone the rounds, the robin in the big elm warbles loudly his claim to the crotch where the icestorm tore off a limb, and all appurtenances pertaining thereto (meaning, in his case, all the angleworms in the not-very-spacious subjacent lawn).

The robin's insistent caroling awakens the oriole, who now tells the world of orioles that the pendant branch of the elm belongs to him, together with all fiber-bearing milkweed stalks near by, all loose strings in the garden, and the exclusive right to flash like a burst of fire from one of these to another.

My watch says 3:50. The indigo bunting on the hill asserts title to the dead oak limb left by the 1936 drouth, and to divers near-by bugs and bushes. He does not claim, but I think he implies, the right to out-blue all bluebirds, and all spiderworts that have turned their faces to the dawn.

Next the wren—the one who discovered the knothole in the eave of the cabin—explodes into song. Half a dozen other wrens give voice, and now all is bedlam. Grosbeaks, thrashers, yellow warblers, bluebirds, vireos, towhees, cardinals—all are at it. My solemn list of performers, in their order and time of first song, hesitates, wavers, ceases, for my ear can no longer filter out priorities. Besides, the pot is empty and the sun is about to rise. I must inspect my domain before my title runs out.

We sally forth, the dog and I, at random. He has paid scant respect to all these vocal goings-on, for to him the evidence of tenantry is not song, but scent. Any illiterate bundle of feathers, he says, can make a noise in a tree. Now he is going to translate for me the olfactory poems that who-knows-what silent creatures have written in the summer night. At the end of each poem sits the author—if we can find him. What we actually find is beyond predicting: a rabbit, suddenly yearning to be elsewhere; a woodcock, fluttering his disclaimer; a cock pheasant, indignant over wetting his feathers in the grass.

Once in a while we turn up a coon or mink, returning late from the night's foray. Sometimes we rout a heron from his unfinished fishing, or surprise a mother wood duck with her convoy of ducklings, headed full-steam for the shelter of the pickerelweeds. Sometimes we see deer sauntering back to the thickets, replete with alfalfa blooms, veronica, and wild lettuce. More often we see only the interweaving darkened lines that lazy hoofs have traced on the silken fabric of the dew.

I can feel the sun now. The bird-chorus has run out of breath. The far clank of cowbells bespeaks a herd ambling to pasture. A tractor roars warning that my neighbor is astir. The world has shrunk to those mean dimensions known to county clerks. We turn toward home, and breakfast.

Prairie Birthday

During every week from April to September there are, on the average, ten wild plants coming into first bloom. In June as many as a dozen species may burst their buds on a single day. No man can heed all of these anniversaries; no man can ignore all of them. He who steps unseeing on May dandelions may be hauled up short by August ragweed pollen; he who ignores the ruddy haze of April elms may skid his car on the fallen corollas of June catalpas. Tell me of what plant-birthday a man takes notice, and I shall tell you a good deal about his vocation, his hobbies, his hay fever, and the general level of his ecological education.

Every July I watch eagerly a certain country graveyard that I pass in driving to and from my farm. It is time for a prairie birthday, and in one corner of this graveyard lives a surviving celebrant of that once important event.

It is an ordinary graveyard, bordered by the usual spruces, and studded with the usual pink granite or white marble headstones, each with the usual Sunday bouquet of red or pink geraniums. It is extraordinary only in being triangular instead of square, and in harboring, within the sharp angle of its fence, a pinpoint remnant of the native prairie on which the graveyard was established in the 1840's. Heretofore unreachable by scythe or mower, this yard-square relic of original Wisconsin gives birth, each July, to a man-high stalk of compass plant or cutleaf Silphium, spangled with saucer-sized yellow blooms resembling sunflowers. It is the sole remnant of this plant along this highway, and perhaps the sole remnant in the western half of our county. What a thousand acres of Silphiums looked like when they tickled the bellies of the buffalo is a question never again to be answered, and perhaps not even asked.

This year I found the Silphium in first bloom on 24 July, a week later than usual; during the last six years the average date was 15 July.

When I passed the graveyard again on 3 August, the fence had been removed by a road crew, and the Silphium cut. It is easy now to predict the future; for a few years my Silphium will try in vain to rise above the mowing machine, and then it will die. With it will die the prairie epoch.

The Highway Department says that 100,000 cars pass yearly over this route during the three summer months when the Silphium is in bloom. In them must ride at least 100,000 people who have 'taken' what is called history, and perhaps 25,000 who have 'taken' what is called botany. Yet I doubt whether a dozen have seen the Silphium, and of these hardly one will notice its demise. If I were to tell a preacher of the adjoining church that the road crew has been burning history books in his cemetery, under the guise of mowing weeds, he would be amazed and uncomprehending. How could a weed be a book?

This is one little episode in the funeral of the native flora, which in turn is one episode in the funeral of the floras of the world. Mechanized man, oblivious of floras, is proud of his progress in cleaning up the landscape on which, willy-nilly, he must live out his days. It might be wise to prohibit at once all teaching of real botany and real history, lest some future citizen suffer qualms about the floristic price of his good life.

Thus it comes to pass that farm neighborhoods are good in proportion to the poverty of their floras. My own farm was selected for its lack of goodness and its lack of highway; indeed my whole neighborhood lies in a backwash of the River Progress. My road is the original wagon track of the pioneers, innocent of grades or gravel, brushings or bulldozers. My neighbors bring a sigh to the County Agent. Their fencerows go unshaven for years on end. Their marshes are neither dyked nor drained. As between going fishing and going forward, they are prone to prefer fishing. Thus on week ends my floristic standard of living is that of the backwoods, while on week days I subsist as best I can on the flora of the university farms, the university campus, and the adjoining suburbs. For a decade I have kept, for pastime, a record of the wild plant species in first bloom on these two diverse areas:

Species First Blooming in	Suburb and Campus	Backward Farm
April	14	26
May	29	59
June	43	70
July	25	56
August	9	14
September	0	1
Total visual diet	120	226

It is apparent that the backward farmer's eye is nearly twice as well fed as the eye of the university student or businessman. Of course neither sees his flora as yet, so we are confronted by the two alternatives already mentioned: either insure the continued blindness of the populace, or examine the question whether we cannot have both progress and plants.

The shrinkage in the flora is due to a combination of clean-farming, woodlot grazing, and good roads. Each of these necessary changes of course requires a larger reduction in the acreage available for wild plants, but none of them requires, or benefits by, the erasure of species from whole farms, townships, or counties. There are idle spots on every farm, and every highway is bordered by an idle strip as long as it is; keep cow, plow, and mower out of these idle spots, and the full native flora, plus dozens of interesting stowaways from foreign parts, could be part of the normal environment of every citizen.

The outstanding conservator of the prairie flora, ironically enough, knows little and cares less about such frivolities: it is the railroad with its fenced right-of-way. Many of these railroad fences were erected before the prairie had been plowed. Within these linear reservations, oblivious of cinders, soot, and annual clean-up fires, the prairie flora still splashes its calendar of colors, from pink shooting-star in May to blue aster in October. I have long wished to confront some hard-boiled railway president with the physical evidence of his soft-heartedness. I have not done so because I haven't met one.

The railroads of course use flame-throwers and chemical sprays to clear the track of weeds, but the cost of such necessary clearance is still too high to extend it much beyond the actual rails. Perhaps further improvements are in the offing.

The erasure of a human subspecies is largely painless—to us—if we know little enough about it. A dead Chinaman is of little import to us whose awareness of things Chinese is bounded by an occasional dish of chow mein. We grieve only for what we know. The erasure of Silphium from western Dane County is no cause for grief if one knows it only as a name in a botany book.

Silphium first became a personality to me when I tried to dig one up to move to my farm. It was like digging an oak sapling. After half an hour of hot grimy labor the root was still enlarging, like a great vertical sweet-potato. As far as I know, that Silphium root went clear through to bedrock. I got no Silphium, but I learned by what elaborate underground stratagems it contrives to weather the prairie drouths.

I next planted Silphium seeds, which are large, meaty, and taste like sunflower seeds. They came up promptly, but after five years of waiting the seedlings are still juvenile, and have not yet borne a flower-stalk. Perhaps it takes a decade for a Silphium to reach flowering age; how old, then, was my pet plant in the cemetery? It may have been older than the oldest tombstone, which is dated 1850. Perhaps it watched the fugitive Black Hawk retreat from the

Madison lakes to the Wisconsin River; it stood on the route of that famous march. Certainly it saw the successive funerals of the local pioneers as they retired, one by one, to their repose beneath the bluestem.

I once saw a power shovel, while digging a roadside ditch, sever the 'sweet-potato' root of a Silphium plant. The root soon sprouted new leaves, and eventually it again produced a flower stalk. This explains why this plant, which never invades new ground, is nevertheless sometimes seen on recently graded roadsides. Once established, it apparently withstands almost any kind of mutilation except continued grazing, mowing, or plowing.

Why does Silphium disappear from grazed areas? I once saw a farmer turn his cows into a virgin prairie meadow previously used only sporadically for mowing wild hay. The cows cropped the Silphium to the ground before any other plant was visibly eaten at all. One can imagine that the buffalo once had the same preference for Silphium, but he brooked no fences to confine his nibblings all summer long to one meadow. In short, the buffalo's pasturing was discontinuous, and therefore tolerable to Silphium.

It is a kind providence that has withheld a sense of history from the thousands of species of plants and animals that have exterminated each other to build the present world. The same kind providence now withholds it from us. Few grieved when the last buffalo left Wisconsin, and few will grieve when the last Silphium follows him to the lush prairies of the never-never land.

August

The Green Pasture

Some paintings famous because, being durable, they are viewed by successive generations, in each of which are likely to be found a few appreciative eyes.

I know a painting so evanescent that it is seldom viewed at all, except by some wandering deer. It is a river who wields the brush, and it is the same river who, before I can bring my friends to view his work, erases it forever from human view. After that it exists only in my mind's eye.

Like other artists, my river is temperamental; there is no predicting when the mood to paint will come upon him, or how long it will last. But in midsummer, when the great white fleets cruise the sky for day after flawless day, it is worth strolling down to the sandbars just to see whether he has been at work.

The work begins with a broad ribbon of silt brushed thinly on the sand of a receding shore. As this dries slowly in the sun, goldfinches bathe in its pools, and deer, herons, kill-

deers, raccoons, and turtles cover it with a lacework of tracks. There is no telling, at this stage, whether anything further will happen.

But when I see the silt ribbon turning green with Eleocharis, I watch closely thereafter, for this is the sign that the river is in a painting mood. Almost overnight the Eleocharis becomes a thick turf, so lush and so dense that the meadow mice from the adjoining upland cannot resist the temptation. They move en masse to the green pasture, and apparently spend the nights rubbing their ribs in its velvety depths. A maze of neatly tended mouse-trails bespeaks their enthusiasm. The deer walk up and down in it, apparently just for the pleasure of feeling it underfoot. Even a stay-at-home mole has tunneled his way across the dry bar to the Eleocharis ribbon, where he can heave and hump the verdant sod to his heart's content.

At this stage the seedlings of plants too numerous to count and too young to recognize spring to life from the damp warm sand under the green ribbon.

To view the painting, give the river three more weeks of solitude, and then visit the bar on some bright morning just after the sun has melted the daybreak fog. The artist has now laid his colors, and sprayed them with dew. The Eleocharis sod, greener than ever, is now spangled with blue mimulus, pink dragon-head, and the milk-white blooms of Sagittaria. Here and there a cardinal flower thrusts a red spear skyward. At the head of the bar, purple ironweeds and pale pink joe-pyes stand tall against the wall of willows. And if you have come quietly and humbly, as you should to any spot that can be beautiful only once, you may surprise a fox-red deer, standing knee-high in the garden of his delight.

Do not return for a second view of the green pasture, for there is none. Either falling water has dried it out, or rising water has scoured the bar to its original austerity of clean sand. But in your mind you may hang up your picture, and hope that in some other summer the mood to paint may come upon the river.

September

The Choral Copse

By september, the day breaks with little help from birds. A song sparrow may give a single halfhearted song, a woodcock may twitter overhead en route to his daytime thicket, a barred owl may terminate the night's argument with one last wavering call, but few other birds have anything to say or sing about.

It is on some, but not all, of these misty autumn daybreaks that one may hear the chorus of the quail. The silence is suddenly broken by a dozen contralto voices, no longer

able to restrain their praise of the day to come. After a brief minute or two, the music closes as suddenly as it began.

There is a peculiar virtue in the music of elusive birds. Songsters that sing from topmost boughs are easily seen and as easily forgotten; they have the mediocrity of the obvious. What one remembers is the invisible hermit thrush pouring silver chords from impenetrable shadows; the soaring crane trumpeting from behind a cloud; the prairie chicken booming from the mists of nowhere; the quail's Ave Maria in the hush of dawn. No naturalist has even seen the choral act, for the covey is still on its invisible roost in the grass, and any attempt to approach automatically induces silence.

In June it is completely predictable that the robin will give voice when the light intensity reaches 0.01 candle power, and that the bedlam of other singers will follow in predictable sequence. In autumn, on the other hand, the robin is silent, and it is quite unpredictable whether the covey-chorus will occur at all. The disappointment I feel on these mornings of silence perhaps shows that things hoped for have a higher value than things assured. The hope of hearing quail is worth half a dozen risings-in-the-dark.

My farm always has one or more coveys in autumn, but the daybreak chorus is usually distant. I think this is because the coveys prefer to roost as far as possible from the dog, whose interest in quail is even more ardent than my own. One October dawn, however, as I sat sipping coffee by the outdoor fire, a chorus burst into song hardly a stone's throw away. They had roosted under a white-pine copse, possibly to stay dry during the heavy dews.

We felt honored by this daybreak hymn sung almost at our doorstep. Somehow the blue autumnal needles on those pines became thenceforth bluer, and the red carpet of dewberry under those pines became even redder.

October

Smoky Gold

There are two kinds of hunting: ordinary hunting, and ruffed-grouse hunting.

There are two places to hunt grouse: ordinary places, and Adams County.

There are two times to hunt in Adams: ordinary times, and when the tamaracks are smoky gold. This is written for those luckless ones who have never stood, gun empty and mouth agape, to watch the golden needles come sifting down, while the feathery-rocket that knocked them off sails unscathed into the jackpines.

The tamaracks change from green to yellow when the first frosts have brought woodcock, fox sparrows, and juncos out of the north. Troops of robins are stripping the last white

berries from the dogwood thickets, leaving the empty stems as a pink haze against the hill. The creekside alders have shed their leaves, exposing here and there an eyeful of holly. Brambles are aglow, lighting your footsteps grouseward.

The dog knows what is grouseward better than you do. You will do well to follow him closely, reading from the cock of his ears the story the breeze is telling. When at last he stops stock-still, and says with a sideward glance, 'Well, get ready,' the question is, ready for what? A twittering woodcock, or the rising roar of a grouse, or perhaps only a rabbit? In this moment of uncertainty is condensed much of the virtue of grouse hunting. He who must know what to get ready for should go and hunt pheasants.

Hunts differ in flavor, but the reasons are subtle. The sweetest hunts are stolen. To steal a hunt, either go far into the wilderness where no one has been, or else find some undiscovered place under everybody's nose.

Few hunters know that grouse exist in Adams County, for when they drive through it, they see only a waste of jackpines and scrub oaks. This is because the highway intersects a series of west-running creeks, each of which heads in a swamp, but drops to the river through dry sand-barrens. Naturally the northbound highway intersects these swampless barrens, but just above the highway, and behind the screen of dry scrub, every creeklet expands into a broad ribbon of swamp, a sure haven for grouse.

Here, come October, I sit in the solitude of my tamaracks and hear the hunters' cars roaring up the highway, hell-bent for the crowded counties to the north. I chuckle as I picture their dancing speedometers, their strained faces, their eager eyes glued on the northward horizon. At the noise of their passing, a cock grouse drums his defiance. My dog grins as we note his direction. That fellow, we agree, needs some exercise; we shall look him up presently.

The tamaracks grow not only in the swamp, but at the foot of the bordering upland, where springs break forth. Each spring has become choked with moss, which forms a boggy terrace. I call these terraces the hanging gardens, for out of their sodden muck the fringed gentians have lifted blue jewels. Such an October gentian, dusted with tamarack gold, is worth a full stop and a long look, even when the dog signals grouse ahead.

Between each hanging garden and the creekside is a moss-paved deer trail, handy for the hunter to follow, and for the flushed grouse to cross—in a split second. The question is whether the bird and the gun agree on how a second should be split. If they do not, the next deer that passes finds a pair of empty shells to sniff at, but no feathers.

Higher up the creeklet I encounter an abandoned farm. I try to read, from the age of the young jackpines marching across an old field, how long ago the luckless farmer found out that sand plains were meant to grow solitude, not corn. Jackpines tell tall tales to the unwary, for they put on several whorls of branches each year, instead of only one. I find a

better chronometer in an elm seedling that now blocks the barn door. Its rings date back to the drouth of 1930. Since that year no man has carried milk out of this barn.

I wonder what this family thought about when their mortgage finally outgrew their crops, and thus gave the signal for their eviction. Many thoughts, like flying grouse, leave no trace of their passing, but some leave clues that outlast the decades. He who, in some unforgotten April, planted this lilac must have thought pleasantly of blooms for all the Aprils to come. She who used this washboard, its corrugations worn thin with many Mondays, may have wished for a cessation of all Mondays, and soon.

Musing on such questions, I become aware of the dog down by the spring, pointing patiently these many minutes. I walk up, apologizing for my inattention. Up twitters a woodcock, batlike, his salmon breast soaked in October sun. Thus goes the hunt.

It's hard on such a day to keep one's mind on grouse, for there are many distractions. I cross a buck track in the sand, and follow in idle curiosity. The track leads straight from one Jersey tea bush to another, with nipped twigs showing why.

This reminds me of my own lunch, but before I get it pulled out of my game pocket, I see a circling hawk, high skyward, needing identification. I wait till he banks and shows hisredtail.

I reach again for the lunch, but my eye catches a peeled popple. Here a buck has rubbed off his itchy velvet. How long ago? The exposed wood is already brown; I conclude that horns must therefore be clean by now.

I reach again for the lunch, but am interrupted by an excited yawp from the dog, and a crash of bushes in the swamp. Out springs a buck, flag aloft, horns shining, his coat a sleek blue. Yes, the popple told the truth.

This time I get the lunch all the way out and sit down to eat. A chickadee watches me, and grows confidential about his lunch. He doesn't say what he ate, perhaps it was cool turgid ant-eggs, or some other avian equivalent of cold roast grouse.

Lunch over, I regard a phalanx of young tamaracks, their golden lances thrusting skyward. Under each the needles of yesterday fall to earth building a blanket of smoky gold; at the tip of each the bud of tomorrow, preformed, poised, awaits another spring.

沙郡年记

Too Early

Getting up too early is a vice habitual in horned owls, stars, geese, and freight trains. Some hunters acquire it from geese, and some coffee pots from hunters. It is strange that of all the multitude of creatures who must rise in the morning at some time, only these few should have discovered the most pleasant and least useful time for doing it.

Orion must have been the original mentor of the too-early company, for it is he who

signals for too-early rising. It is time when Orion has passed west of the zenith about as far as one should lead a teal.

Early risers feel at ease with each other, perhaps because, unlike those who sleep late, they are given to understatement of their own achievements. Orion, the most widely traveled, says literally nothing. The coffee pot, from its first soft gurgle, underclaims the virtues of what simmers within. The owl, in his trisyllabic commentary, plays down the story of the night's murders. The goose on the bar, rising briefly to a point of order in some inaudible anserine debate, lets fall no hint that he speaks with the authority of all the far hills and the sea.

The freight, I admit, is hardly reticent about his own importance, yet even he has a kind of modesty: his eye is single to his own noisy business, and he never comes roaring into somebody else's camp. I feel a deep security in this single-mindedness of freight trains.

To arrive too early in the marsh is an adventure in pure listening; the ear roams at will among the noises of the night, without let or hindrance from hand or eye. When you hear a mallard being audibly enthusiastic about his soup, you are free to picture a score guzzling among the duckweeds. When one widgeon squeals, you may postulate a squadron without fear of visual contradiction. And when a flock of bluebills, pitching pondward, tears the dark silk of heaven in one long rending nose-dive, you catch your breath at the sound, but there is nothing to see except stars. This same performance, in daytime, would have to be looked at, shot at, missed, and then hurriedly fitted with an alibi. Nor could daylight add anything to your mind's eye picture of quivering wings, ripping the firmament neatly into halves.

The hour of listening ends when the fowl depart on muted wings for wider safer waters, each flock a blur against the graying east.

Like many another treaty of restraint, the pre-dawn pact lasts only as long as darkness humbles the arrogant. It would seem as if the sun were responsible for the daily retreat of reticence from the world. At any rate, by the time the mists are white over the lowlands, every rooster is bragging ad lib, and every corn shock is pretending to be twice as tall as any corn that ever grew. By sun-up every squirrel is exaggerating some fancied indignity to his person, and every jaw proclaiming with false emotion about suppositious dangers to society, at this very moment discovered by him. Distant crows are berating a hypothetical owl, just to tell the world how vigilant crows are, and a pheasant cock, musing perhaps on his philanderings of bygone days, beats the air whit his wings and tells the world in raucous warning that he owns this marsh and all the hens in it.

Nor are all these illusions of grandeur confined to the birds and beasts. By breakfast

time come the honks, horns, shouts, and whistles of the awakened farmyard, and finally, at evening, the drone of an untended radio. Then everybody goes to bed to relearn the lessons of the night.

Red Lanterns

One way to hunt partridge is to make a plan, based on logic and probabilities, of the terrain to be hunted. This will take you over the ground where the birds ought to be.

Another way is to wander, quite aimlessly, from one red lantern to another. This will likely take you where the birds actually are. The lanterns are blackberry leaves, red in October sun.

Red lanterns have lighted my way on many a pleasant hunt in many a region, but I think that blackberries must first have learned how to glow in the sand counties of central Wisconsin. Along the little boggy streams of these friendly wastes, called poor by those whose own lights barely flicker, the blackberries burn richly red on every sunny day from first frost to the last day of the season. Every woodcock and every partridge has his private solarium under these briars. Most hunters, not knowing this, wear themselves out in the briarless scrub, and, returning home birdless, leave the rest of us in peace.

By 'us' I mean the birds, the stream, the dog, and myself. The stream is a lazy one; he winds through the alders as if he would rather stay here than reach the river. So would I. Every one of his hairpin hesitations means that much more streambank where hillside briars adjoin dank beds of frozen ferns and jewelweeds on the boggy bottom. No partridge can long absent himself from such a place, nor can I. Partridge hunting, then, is a creekside stroll, upwind, from one briar patch to another.

The dog, when he approaches the briars, looks around to make sure I am within gunshot. Reassured, he advances with stealthy caution, his wet nose screening a hundred scents for that one scent, the potential presence of which gives life and meaning to the whole landscape. He is the prospector of the air, perpetually searching its strata for olfactory gold. Partridge scent is the gold standard that relates his world to mine.

My dog, by the way, thinks I have much to learn about partridges, and, being a professional naturalist, I agree. He persists in tutoring me, with the calm patience of a professor of logic, in the art of drawing deductions from an educated nose. I delight in seeing him deduce a conclusion, in the form of a point, from data that are obvious to him, but speculative to my unaided eye. Perhaps he hopes his dull pupil will one day learn to smell.

Like other dull pupils, I know when the professor is right, even though I do not know why. I check my gun and walk in. Like any good professor, the dog never laughs when I miss, which is often. He gives me just one look, and proceeds up the stream in quest of

another grouse.

Following one of these banks, one walks astride two landscapes, the hillside one hunts from, and the bottom the dog hunts in. There is a special charm in treading soft dry carpets of Lycopodium to flush birds out of the bog, and the first test of a partridge dog is his willingness to do the wet work while you parallel him on the dry bank.

A special problem arises where the belt of alders widens, and the dog disappears from view. Hurry at once to a knoll or point, where you stand stock-still, straining eye and ear to follow the dog. A sudden scattering of whitethroats may reveal his whereabouts. Again you may hear him breaking a twig, or splashing in a wet spot, or plopping into the creek. But when all sound ceases, be ready for instant action, for he is likely on point. Listen now for the premonitory clucks a frightened partridge gives just before flushing. Then follows the hurtling bird, or perhaps two of them, or I have known as many as six, clucking and flushing one by one, each sailing high for his own destination in the uplands. Whether one passes within gunshot is of course a matter of chance, and you can compute the chance if you have time: 360 degrees divided by 30, or whatever segment of the circle your gun covers. Divide again by 3 or 4, which is your chance of missing, and you have the probability of actual feathers in the hunting coat.

The second test of a good partridge dog is whether he reports for orders after such an episode. Sit down and talk it over with him while he pants. Then look for the next red lantern, and proceed with the hunt.

The October breeze brings my dog many scents other than grouse, each of which may lead to its own peculiar episode. When he points with a certain humorous expression of the ears, I know he has found a bedded rabbit. Once a dead-serious point yielded no bird, but still the dog stood frozen; in a tuft of sedge under his very nose was a fat sleeping coon, getting his share of October sun. At least once on each hunt the dog bays a skunk, usually in some denser-than-ordinary thicket of blackberries. Once the dog pointed in midstream: a whir of wings upriver, followed by three musical cries, told me he had interrupted a wood duck's dinner. Not infrequently he finds jacksnipe in heavily pastured alders, and lastly he may put out a deer, bedded for the day on a high streambank flanked by alder bog. Has the deer a poetical weakness for singing waters, or a practical liking for a bed that cannot be approached without making a noise? Judging by the indignant flick of his great white flag it might be either, or both.

Almost anything may happen between one red lantern and another.

At sunset on the last day of the grouse season, every blackberry blows out his light. I do not understand how a mere bush can thus be infallibly informed about the Wisconsin statutes, nor have I ever gone back next day to find out. For the ensuing eleven months the

lanterns glow only in recollection. I sometimes think that the other months were constituted mainly as a fitting interlude between Octobers, and I suspect that dogs, and perhaps grouse, share the same view.

November

If I Were the Wind

The wind that makes music in November corn is in a hurry. The stalks hum, the loose husks whisk skyward in half-playful swirls, and the wind hurries on.

In the marsh, long windy waves surge across the grassy sloughs, beat against the far willows. A tree tries to argue, bare limbs waving, but there is no detaining the wind.

On the sandbar there is only wind, and the river sliding seaward. Every wisp of grass is drawing circles on the sand. I wander over the bar to a driftwood log, where I sit and listen to the universal roar, and to the tinkle of wavelets on the shore. The river is lifeless: not a duck, heron, marshhawk, or gull but has sought refuge from wind.

Out of the clouds I hear a faint bark, as of a faraway dog. It is strange how the world cocks its ears at that sound, wondering. Soon it is louder: the honk of geese, invisible, but coming on.

The flock emerges from the low clouds, a tattered banner of birds, dipping and rising, blown up and blown down, blown together and blown apart, but advancing, the wind wrestling lovingly with each winnowing wing. When the flock is a blur in the far sky I hear the last honk, sounding taps for summer.

It is warm behind the driftwood now, for the wind has gone with the geese. So would I — if I were the wind.

Axe-in-Hand

The Lord giveth, and the Lord taketh away, but He is no longer the only one to do so. When some remote ancestor of ours invented the shovel, he became a giver: he could plant a tree. And when the axe was invented, he became a taker: he could chop it down. Whoever owns land has thus assumed, whether he knows it or not, the divine functions of creating and destroying plants.

Other ancestors, less remote, have since invented other tools, but each of these, upon close scrutiny, proves to be either an elaboration of, or an accessory to, the original pair of basic implements. We classify ourselves into vocations, each of which either wields some particular tool, or sells it, or repairs it, or sharpens it, or dispenses advice on how to do so;

by such division of labors we avoid responsibility for the misuse of any tool save our own. But there is one vocation—philosophy—which knows that all men, by what they think about and wish for, in effect wield all tools. It knows that men thus determine, by their manner of thinking and wishing, whether it is worth while to wield any.

November is, for many reasons, the month for the axe. It is warm enough to grind an axe without freezing, but cold enough to fell a tree in comfort. The leaves are off the hardwoods, so that one can see just how the branches intertwine, and what growth occurred last summer. Without this clear view of treetops, one cannot be sure which tree, if any, needs felling for the good of the land.

I have read many definitions of what is a conservationist, and written not a few myself, but I suspect that the best one is written not with a pen, but with an axe. It is a matter of what a man thinks about while chopping, or while deciding what to chop. A conservationist is one who is humbly aware that with each stroke he is writing his signature on the face of his land. Signatures of course differ, whether written with axe or pen, and this is as it should be.

I find it disconcerting to analyze, ex post facto, the reasons behind my own axe-in-hand decisions. I find, first of all, that not all trees are created free and equal. Where a white pine and a red birch are crowding each other, I have an a priori bias; I always cut the birch to favor the pine. Why?

Well, first of all, I planted the pine with my shovel, whereas the birch crawled in under the fence and planted itself. My bias is thus to some extent paternal, but this cannot be the whole story, for if the pine were a natural seeding like the birch, I would value it even more. So I must dig deeper for the logic, if any, behind my bias.

The birch is an abundant tree in my township and becoming more so, whereas pine is scarce and becoming scarcer; perhaps my bias is for the underdog. But, what would I do if my farm were further north, where pine is abundant and red birch is scarce? I confess I don't know. My farm is here.

The pine will live for a century, the birch for half that; do I fear that my signature will fade? My neighbors have planted no pines but all have many birches; am I snobbish about having a woodlot of distinction? The pine stays green all winter, the birch punches the clock in October; do I favor the tree that, like myself, braves the winter wind? The pine will shelter a grouse but the birch will feed him; do I consider bed more important than board? The pine will ultimately bring ten dollars a thousand, the birch two dollars; have I an eye on the bank? All of these possible reasons for my bias seem to carry some weight, but none of them carries very much.

So I try again, and here perhaps is something; under this pine will ultimately grow a trailing arbutus, an Indian pipe, a pyrola, or a twin flower, whereas under the birch a bottle

gentian is about the best to be hoped for. In this pine a pileated woodpecker will ultimately chisel out a nest; in the birch a hairy will have to suffice. In this pine the wind will sing for me in April, at which time the birch is only rattling naked twigs. These possible reasons for my bias carry weight, but why? Does the pine stimulate my imagination and my hopes more deeply than the birch does? If so, is the difference in the tress, or in me?

The only conclusion I have ever reached is that I love all trees, but I am in love with pines.

As I said, November is the month for the axe, and, as in other love affairs, there is skill in the exercise of bias. If the birch stands south of the pine, and is taller, it will shade the pine's leader in the spring, and thus discourage the pine weevil from laying her eggs there. Birch competition is a minor affliction compared with this weevil, whose progeny kill the pine's leader and thus deform the tree. It is interesting to meditate that this insect's preference for squatting in the sun determines not only her own continuity as a species, but also the future figure of my pine, and my own success as a wielder of axe and shovel.

Again, if a drouthy summer follows my removal of the birch's shade, the hotter soil may offset the lesser competition for water, and my pine be none the better for my bias.

Lastly, if the birch's limbs rub the pine's terminal buds during a wind, the pine will surely be deformed, and the birch must either be removed regardless of other considerations, or else it must be pruned of limbs each winter to a height greater than the pine's prospective summer growth.

Such are the pros and cons the wielder of an axe must foresee, compare, and decide upon with the calm assurance that his bias will, on the average, prove to be something more than good intentions.

The wielder of an axe has as many biases as there are species of trees on his farm. In the course of the years he imputes to each species, from his responses to their beauty or utility, and their responses to his labors for or against them, a series of attributes that constitute a character. I am amazed to learn what diverse characters different men impute to one and the same tree.

Thus to me the aspen is in good repute because he glorifies October and he feeds my grouse in winter, but to some of my neighbors he is a mere weed, perhaps because he sprouted so vigorously in the stump lots their grandfathers were attempting to clear. (I cannot sneer at this, for I find myself disliking the elms whose resproutings threaten my pines.)

Again, the tamarack is to me a favorite second only to white pine, perhaps because he is nearly extinct in my township (underdog bias), or because he sprinkles gold on October grouse (gunpowder bias), or because he sours the soil and enables it to grow the loveliest of our orchids, the showy lady's-slipper. On the other hand, foresters have excommunicated

the tamarack because he grows too slowly to pay compound interest. In order to clinch this dispute, they also mention that he succumbs periodically to epizootics of saw-fly, but this is fifty years hence for my tamaracks, so I shall let my grandson worry about it. Meanwhile my tamaracks are growing so lustily that my spirits soar with them, skyward.

To me an ancient cottonwood is the greatest of trees because in his youth he shaded the buffalo and wore a halo of pigeons, and I like a young cottonwood because he may some day become ancient. But the farmer's wife (and hence the farmer) despises all cottonwoods because in June the female tree clogs the screens with cotton. The modern dogma is comfort at any cost.

I find my biases more numerous than those of my neighbors because I have individual likings for many species that they lump under one aspersive category: brush. Thus I like the wahoo, partly because deer, rabbits, and mice are so avid to eat his square twigs and green bark and partly because his cerise berries glow so warmly against November snow. I like the red dogwood because he feeds October robins, and the prickly ash because my woodcock take their daily sunbath under the shelter of his thorns. I like the hazel because his October purple feeds my eye, and because his November catkins feed my deer and grouse. I like the bitter-sweet because my father did, and because the deer, on the 1st of July of each year, begin suddenly to eat the new leaves, and I have learned to predict this event to my guests. I cannot dislike a plant that enables me, a mere professor, to blossom forth annually as a successful seer and prophet.

It is evident that our plant biases are in part traditional. If your grandfather liked hickory nuts, you will like the hickory tree because your father told you to. If, on the other hand, your grandfather burned a log carrying a poison ivy vine and recklessly stood in the smoke, you will dislike the species, no matter with what crimson glories it warms your eyes eachfall.

It is also evident that our plant biases reflect not only vocations but avocations, with a delicate allocation of priority as between industry and indolence. The farmer who would rather hunt grouse than milk cows will not dislike hawthorn, no matter if it does invade his pasture. The coon-hunter will not dislike basswood, and I know of quail hunters who bear no grudge against ragweed, despite their annual bout with hayfever. Our biases are indeed a sensitive index to our affections, our tastes, our loyalties, our generosities, and our manner of wasting weekends.

Be that as it may, I am content to waste mine, in November, with axe in hand.

A Mighty Fortress

Every farm woodland, in addition to yielding lumber, fuel, and posts, should provide

its owner a liberal education. This crop of wisdom never fails, but it is not always harvested. I here record some of the many lessons I have learned in my own woods.

Soon after I bought the woods a decade ago, I realized that I had bought almost as many tree diseases as I had trees. My woodlot is riddled by all the ailments wood is heir to. I began to wish that Noah, when he loaded up the Ark, had left the tree diseases behind. But it soon became clear that these same diseases made my woodlot a mighty fortress, unequaled in the whole county.

My woods is headquarters for a family of coons; few of my neighbors have any. One Sunday in November, after a new snow, I learned why. The fresh track of a coon-hunter and his hound led up to a halfuprooted maple, under which one of my coons had taken refuge. The frozen snarl of roots and earth was too rocky to chop and too tough to dig; the holes under the roots were too numerous to smoke out. The hunter had quit coonless because a fungus disease had weakened the roots of the maple. The tree, half tipped over by a storm, offers an impregnable fortress for coondom. Without this 'bombproof' shelter, my seed stock of coons would be cleaned out by hunters each year.

My woods houses a dozen ruffed grouse, but during periods of deep snow my grouse shift to my neighbor's woods, where there is better cover. However, I always retain as many grouse as I have oaks wind-thrown by summer storms. These summer windfalls keep their dried leaves, and during snows each such windfall harbors a grouse. The droppings show that each grouse roosts, feeds, and loafs for the duration of the storm within the narrow confines of his leafy camouflage, safe from wind, owl, fox, and hunter. The cured oak leaves not only serve as cover, but, for some curious reason, are relished as food by the grouse.

These oak windfalls are, of course, diseased trees. Without disease, few oaks would break off, and hence few grouse would have down tops to hide in.

Diseased oaks also provide another apparently delectable grouse food: oak galls. A gall is a diseased growth of new twigs that have been stung by a gallwasp while tender and succulent. In October my grouse are often stuffed with oak galls.

Each year the wild bees load up one of my hollow oaks with combs, and each year trespassing honey-hunters harvest the honey before I do. This is partly because they are more skillful than I am in 'lining up' the bee trees, and partly because they use nets, and hence are able to work before the bees become dormant in fall. But for heart-rots, there would be no hollow oaks to furnish wild bees with oaken hives.

During high years of the cycle, there is a plague of rabbits in my woods. They eat the bark and twigs off almost every kind of tree or bush I am trying to encourage, and ignore almost every kind I should like to have less of. (When the rabbit-hunter plants himself a grove of pines or an orchard, the rabbit somehow ceases to be a game animal and becomes

a pest instead.)

The rabbit, despite his omnivorous appetite, is an epicure in some respects. He always prefers a handplanted pine, maple, apple, or wahoo to a wild one. He also insists that certain salads be preconditioned before he deigns to eat them. Thus he spurns red dogwood until it is attacked by oyster-shell scale, after which the bark becomes a delicacy, to be eagerly devoured by all the rabbits in the neighborhood.

A flock of a dozen chickadees spends the year in my woods. In winter, when we are harvesting diseased or dead trees for our fuel wood, the ring of the axe is dinner gong for the chickadee tribe. They hang in the offing waiting for the tree to fall, offering pert commentary on the slowness of our labor. When the tree at last is down, and the wedges begin to open up its contents, the chickadees draw up their white napkins and fall to. Every slab of dead bark is, to them, a treasury of eggs, larvae, and cocoons. For them every ant-tunneled heartwood bulges with milk and honey. We often stand a fresh split against a nearby tree just to see the greedy chicks mop up the ant-eggs. It lightens our labor to know that they, as well as we, derive aid and comfort from the fragrant riches of newly split oak.

But for diseases and insect pests, there would likely be no food in these trees, and hence no chickadees to add cheer to my woods in winter.

Many other kinds of wildlife depend on tree diseases. My pileated woodpeckers chisel living pines, to extract fat grubs from the diseased heartwood. My barred owls find surcease from crows and jays in the hollow heart of an old basswood; but for this diseased tree their sundown serenade would probably be silenced. My wood ducks nest in hollow trees; every June brings its brood of downy ducklings to my woodland slough. All squirrels depend, for permanent dens, on a delicately balanced equilibrium between a rotting cavity and the scar tissue with which the tree attempts to close the wound. The squirrels referee the contest by gnawing out the scar tissue when it begins unduly to shrink the amplitude of their front door.

The real jewel of my disease-ridden woodlot is the prothonotary warbler. He nests in an old woodpecker hole, or other small cavity, in a dead snag overhanging water. The flash of his gold-and-blue plumage amid the dank decay of the June woods is in itself proof that dead trees are transmuted into living animals, and vice versa. When you doubt the wisdom of this arrangement, take a look at the prothonotary.

December

Home Range

The wild things that live on my farm are reluctant to tell me, in so many words, how

much of my township is included within their daily or nightly beat. I am curious about this, for it gives me the ratio between the size of their universe and the size of mine, and it conveniently begs the much more important question, who is the more thoroughly acquainted with the world in which he lives?

Like people, my animals frequently disclose by their actions what they decline to divulge in words. It is difficult to predict when and how one of these disclosures will come tolight.

The dog, being no hand with an axe, is free to hunt while the rest of us are making wood. A sudden yip-yip-yip gives us notice that a rabbit, flushed from his bed in the grass, is headed elsewhere in a hurry. He makes a beeline for a woodpile a quarter-mile distant, where he ducks between two corded stacks, a safe gunshot ahead of his pursuer. The dog, after leaving a few symbolic toothmarks on the hard oak, gives it up and resumes his search for some less canny cottontail, and we resume our chopping.

This little episode tells me that this rabbit is familiar with all of the ground between his bed in the meadow and his blitz-cellar under the woodpile. How else the beeline? This rabbit's home range is at least a quarter-mile in extent.

The chickadees that visit our feeding station are trapped and banded each winter. Some of our neighbors also feed chickadees, but none band them. By noticing the furthest points from my feeder at which banded chickadees are seen, we have learned that the home range of our flock is half a mile across in winter, but that it includes only areas protected from wind.

In summer, when the flock has dispersed for nesting, banded birds are seen at greater distances, often mated with unbanded birds. At this season the chickadees pay no heed to wind, often being found in open wind-swept places.

The fresh tracks of three deer, clear in yesterday's snow, pass through our woods. I follow the tracks backward and find a cluster of three beds, clear of snow, in the big willow thicket on the sandbar.

I then follow the tracks forward; they lead to my neighbor's cornfield, where the deer have pawed waste corn out of the snow, and also tousled one of the shocks. The tracks then lead back, by another route, to the sandbar. En route the deer have pawed at some grass tufts, nuzzling for the tender green sprouts within, and they have also drunk at a spring. My picture of the night's routine is complete. The over-all distance from bed to breakfast is a mile.

Our woods always harbors grouse, but one day last winter, after a deep and soft snow, I could find neither a grouse nor a track of one. I had about concluded that my birds had moved out, when my dog came to a point in the leafy top of an oak blown down last summer. Three grouse flushed out, one by one.

There were no tracks under or near the down top. Obviously threse birds had flown in, but from where? Grouse must eat, especially in zero weather, so I examined the droppings for a clue. Among much unrecognizable debris I found bud-scales, and also the tough yellow skins of frozen nightshade berries.

In a thicket of young soft maple I had noticed, in summer, an abundant growth of nightshade. I went there and, after a search, found grouse tracks on a log. The birds had not waded the soft snow; they had walked the logs and picked the berries projecting here and there within their reach. This was a quarter-mile east of the down oak.

That evening, at sunset, I saw a grouse budding in a popple thicket a quarter-mile west. There were no tracks. This completed the story. These birds, for the duration of the soft snow, were covering their home range awing, not afoot, and the range was half a mile across.

Science knows little about home range: how big it is at various seasons, what food and cover it must include, when and how it is defended against trespass, and whether ownership is an individual, family, or group affair. There are the fundamentals of animal economics, or ecology. Every farm is a textbook on animal ecology; woodsmanship is the translation of the book.

Pines Above the Snow

Acts of creation are ordinarily reserved for gods and poets, but humbler folk may circumvent this restriction if they know how. To plant a pine, for example, one need be neither god nor poet; one need only own a shovel. By virtue of this curious loophole in the rules, any clodhopper may say: Let there be a tree-and there will be one.

If his back be strong and his shovel sharp, there may eventually be ten thousand. And in the seventh year he may lean upon his shovel, and look upon his trees, and find them good.

God passed on his handiwork as early as the seventh day, but I notice He has since been rather noncommittal about its merits. I gather either that He spoke too soon, or that trees stand more looking upon than do fig leaves and firmaments.

Why is the shovel regarded as a symbol of drudgery? Perhaps because most shovels are dull. Certainly all drudges have dull shovels, but I am uncertain which of these two facts is cause and which effect. I only know that a good file, vigorously wielded, makes my shovel sing as it slices the mellow loam. I am told there is music in the sharp plane, the sharp chisel, and the sharp scalpel, but I hear it best in my shovel; it hums in my wrists as I plant a pine. I suspect that the fellow who tried so hard to strike one clear note upon the harp of time chose too difficult an instrument.

It is well that the planting season comes only in spring, for moderation is best in all things, even shovels. During the other months you may watch the process of becoming a pine.

The pine's new year begins in May, when the terminal bud becomes 'the candle.' Whoever coined that name for the new growth had subtlety in his soul. 'The candle' sounds like a platitudinous reference to obvious facts: the new shoot is waxy, upright, brittle. But he who lives with pines knows that candle has a deeper meaning, for at its tip burns the eternal flame that lights a path into the future. May after May my pines follow their candles skyward, each headed straight for the zenith, and each meaning to get there if only there be years enough before the last trumpet blows. It is a very old pine who at last forgets which of his many candles is the most important, and thus flattens his crown against the sky. You may forget, but no pine of your own planting will do so in your lifetime.

If you are thriftily inclined, you will find pines congenial company, for, unlike the hand-to-mouth hardwoods, they never pay current bills out of current earnings; they live solely on their savings of the year before. In fact every pine carries an open bankbook, in which his cash balance is recorded by 30 June of each year. If, on that date, his completed candle has developed a terminal cluster of ten or twelve buds, it means that he has salted away enough rain and sun for a two-foot or even a three-foot thrust skyward next spring. If there are only four to six buds, his thrust will be a lesser one, but he will nevertheless wear that peculiar air that goes with solvency.

Hard years, of course, come to pines as they do to men, and these are recorded as shorter thrusts, i.e. shorter spaces between the successive whorls of branches. These spaces, then, are an autobiography that he who walks with trees may read at will. In order to date a hard year correctly, you must always subtract one from the year of lesser growth. Thus the 1937 growth was short in all pines; this records the universal drouth of 1936. On the other hand the 1941 growth was long in all pines; perhaps they saw the shadow of things to come, and made a special effort to show the world that pines still know where they are going, even though men do not.

When one pine shows a short year but his neighbors do not, you may safely interpolate some purely local or individual adversity: a fire scar, a gnawing meadowmouse, a windburn, or some local bottleneck in that dark laboratory we call the soil.

There is much small-talk and neighborhood gossip among pines. By paying heed to this chatter, I learn what has transpired during the week when I am absent in town. Thus in March, when the deer frequently browse white pines, the height of the browsings tells me how hungry they are. A deer full of corn is too lazy to nip branches more than four feet above the ground; a really hungry deer rises on his hind legs and nips as high as eight feet.

Thus I learn the gastronomic status of the deer without seeing them, and I learn, without visiting his field, whether my neighbor has hauled in his cornshocks.

In May, when the new candle is tender and brittle as an asparagus shoot, a bird alighting on it will often break it off. Every spring I find a few such decapitated trees, each with its wilted candle lying in the grass. It is easy to infer what has happened, but in a decade of watching I have never once seen a bird break a candle. It is an object lesson: one need not doubt the unseen.

In June of each year a few white pines suddenly show wilted candles, which shortly thereafter turn brown and die. A pine weevil has bored into the terminal bud cluster and deposited eggs; the grubs, when hatched, bore down along the pith and kill the shoot. Such a leaderless pine is doomed to frustration, for the surviving branches disagree among themselves who is to head the skyward march. They all do, and as a consequence the tree remains a bush.

It is a curious circumstance that only pines in full sunlight are bitten by weevils; shaded pines are ignored. Such are the hidden uses of adversity.

In October my pines tell me, by their rubbed-off bark, when the bucks are beginning to 'feel their oats.' A jackpine about eight feet high, and standing alone, seems especially to incite in a buck the idea that the world needs prodding. Such a tree must perforce turn the other cheek also, and emerges much the worse for wear. The only element of justice in such combats is that the more the tree is punished, the more pitch the buck carries away on his not-so-shiny antlers.

The chit-chat of the woods is sometimes hard to translate. Once in midwinter I found in the droppings under a grouse roost some half-digested structures that I could not identify. They resembled miniature corncobs about half an inch long. I examined samples of every local grouse food I could think of, but without finding any clue to the origin of the 'cobs.' Finally I cut open the terminal bud of a jackpine, and in its core I found the answer. The grouse had eaten the buds, digested the pitch, rubbed off the scales in his gizzard, and left the cob, which was, in effect, the forthcoming candle. One might say that this grouse had been speculating in jackpine 'futures.'

The three species of pine native to Wisconsin (white, red, and jack) differ radically in their opinions about marriageable age. The precocious jackpine sometimes blooms and bears cones a year or two after leaving the nursery, and a few of my 13-year-old jacks already boast of grandchildren. My 13-year-old reds first bloomed this year, but my whites have not yet bloomed; they adhere closely to the Anglo-Saxon doctrine of free, white, and twenty-one.

Were it not for this wide diversity in social outlook, my red squirrels would be much curtailed in their bill-of-fare. Each year in midsummer they start tearing up jackpine cones

for the seeds, and no Labor-Day picnic ever scattered more hulls and rinds over the landscape than they do: under each tree the remains of their annual feast lie in piles and heaps. Yet there are always cones to spare, as attested by their progeny popping up among the goldenrods.

Few people know that pines bear flowers, and most of those who do are too prosy to see in this festival of bloom anything more than a routine biological function. All disillusioned folk should spend the second week in May in a pine woods, and such as wear glasses should take along an extra handkerchief. The prodigality of pine pollen should convince anyone of the reckless exuberance of the season, even when the song of the kinglet has failed to do so.

Young white pines usually thrive best in the absence of their parents. I know of whole woodlots in which the younger generation, even when provided with a place in the sun, is dwarfed and spindled by its elders. Again there are woodlots in which no such inhibition obtains. I wish I knew whether such differences lie in tolerance in the young, in the old, or in the soil.

Pines, like people, are choosy about their associates and do not succeed in suppressing their likes and dislikes. Thus there is an affinity between white pines and dewberries, between red pines and flowering spurge, between jackpines and sweet fern. When I plant a white pine in a dewberry patch, I can safely predict that within a year he will develop a husky cluster of buds, and that his new needles will show that bluish bloom which bespeaks health and congenial company. He will outgrow and outbloom his fellows planted on the same day, with the same care, in the same soil, but in the company of grass.

In October I like to walk among these blue plumes, rising straight and stalwart from the red carpet of dewberry leaves. I wonder whether they are aware of their state of well-being. I know only that I am.

Pines have earned the reputation of being 'evergreen' by the same device that governments use to achieve the appearance of perpetuity: overlapping terms of office. By taking on new needles on the new growth of each year, and discarding old needles at longer intervals, they have led the casual onlooker to believe that needles remain forever green.

Each species of pine has its own constitution, which prescribes a term of office for needles appropriate to its way of life. Thus the white pine retains its needles for a year and a half; the red and jackpines for two years and a half. Incoming needles take office in June, and outgoing needles write farewell addresses in October. All write the same thing, in the same tawny yellow ink, which by November turns brown. Then the needles fall, and are filed in the duff to enrich the wisdom of the stand. It is this accumulated wisdom that hushes the footsteps of whoever walks under pines.

It is in midwinter that I sometimes glean from my pines something more important

than woodlot politics, and the news of the wind and weather. This is especially likely to happen on some gloomy evening when the snow has buried all irrelevant detail, and the hush of elemental sadness lies heavy upon every living thing. Nevertheless, my pines, each with his burden of snow, are standing ramrod-straight, rank upon rank, and in the dusk beyond I sense the presence of hundreds more. At such times I feel a curious transfusion of courage.

65290

To band a bird is to hold a ticket in a great lottery. Most of us hold tickets on our own survival, but we buy them from the insurance company, which knows too much to sell us a really sporting chance. It is an exercise in objectivity to hold a ticket on the banded sparrow that falleth, or on the banded chickadee that may some day reenter your trap, and thus prove that he is still alive.

The tyro gets his thrill from banding new birds; he plays a kind of game against himself, striving to break his previous score for total numbers. But to the old-timer the banding of new birds becomes merely pleasant routine; the real thrill lies in the recapture of some bird banded long ago, some bird whose age, adventures, and previous condition of appetite are perhaps better known to you than to the bird himself.

Thus in our family, the question whether chickadee 65290 would survive for still another winter was, for five years, a sporting question of the first magnitude.

Beginning a decade ago, we have trapped and banded most of the chickadees on our farm each winter. In early winter, the traps yield mostly unbanded birds; these presumably are mostly the young of the year, which, once banded, can thereafter be 'dated.' As the winter wears on, unbanded birds cease to appear in the trap; we then know that the local population consists largely of marked birds. We can tell from the band numbers how many birds are present, and how many of these are survivors from each previous year of banding.

65290 was one of 7 chickadees constituting the 'class of 1937.' When he first entered our trap, he showed no visible evidence of genius. Like his classmates, his valor for suet was greater than his discretion. Like his classmates, he bit my finger while being taken out of the trap. When banded and released he fluttered up to a limb, pecked his new aluminum anklet in mild annoyance, shook his mussed feathers, cursed gently, and hurried away to catch up with the gang. It is doubtful whether he drew any philosophical deductions from his experience (such as 'all is not ants' eggs that glitters'), for he was caught again three times that same winter.

By the second winter our recaptures showed that the class of 7 had shrunk to 3, and by the third winter to 2. By the fifth winter 65290 was the sloe survivor of his generation. Signs

of genius were still lacking, but of his extraordinary capacity for living, there was now historicalproof.

During his sixth winter 65290 failed to reappear, and the verdict of 'missing in action' is now confirmed by his absence during four subsequent trappings.

At that, of 97 chicks banded during the decade, 65290 was the only one contriving to survive for five winters. Three reached 4 years, 7 reached 3 years, 19 reached 2 years, and 67 disappeared after their first winter. Hence if I were selling insurance to chicks, I could compute the premium with assurance. But this would raise the problem: in what currency would I pay the widows? I suppose in ants' eggs.

I know so little about birds that I can only speculate on why 65290 survived his fellows. Was he more clever in dodging his enemies? What enemies? A chickadee is almost too small to have any. That whimsical fellow called Evolution, having enlarged the dinosaur until he tripped over his own toes, tried shrinking the chickadee until he was just too big to be snapped up by flycatchers as an insect, and just too little to be pursued by hawks and owls as meat. Then he regarded his handiwork and laughed. Everyone laughs at so small a bundle of large enthusiasms.

The sparrow hawk, the screech owl, the shrike, and especially the midget saw-whet owl might find it worth while to kill a chickadee, but I've only once found evidence of actual murder: a screech-owl pellet contained one of my bands. Perhaps these small bandits have a fellow-feeling for midgets.

It seems likely that weather is the only killer so devoid of both humor and dimension as to kill a chickadee. I suspect that in the chickadee Sunday School two mortal sins are taught: thou shalt not venture into windy places in winter, thou shalt not get wet before a blizzard.

I learned the second commandment one drizzly winter dusk while watching a band of chicks gong to roost in my woods. The drizzle came out of the south, but I could tell it would turn northwest and bitter cold before morning. The chicks went to bed in a dead oak, the bark of which had peeled and warped into curls, cups, and hollows of various sizes, shapes, and exposures. The bird selecting a roost dry against a south drizzle, but vulnerable to a north one, would surely be frozen by morning. The bird selecting a roost dry from all sides would awaken safe. This, I think, is the kind of wisdom that spells survival in chickdom, and accounts for 65290 and his like.

The chickadee's fear of windy places is easily deduced from his behavior. In winter he ventures away from woods only on calm days, and the distance varies inversely as the breeze. I know several wind-swept woodlots that are chickless all winter, but are freely used at all other seasons. They are wind-swept because cows have browsed out the undergrowth.

To the steam-heated banker who mortgages the farmer who needs more cows who need more pasture, wind is a minor nuisance, except perhaps at the Flatiron corner. To the chickadee, winter wind is the boundary of the habitable world. If the chickadee had an office, the maxim over his desk would say: 'Keep calm.'

His behavior at the trap discloses the reason. Turn your trap so that he must enter with even a moderate wind at his tail, and all the king's horses cannot drag him to the bait. Turn it the other way, and your score may be good. Wind from behind blows cold and wet under the feathers, which are his portable roof and air-conditioner. Nuthatches, juncos, tree sparrows, and woodpeckers likewise fear winds from behind, but their heating plants and hence their wind tolerance are larger in the order named. Books on nature seldom mention wind; they are written behind stoves.

I suspect there is a third commandment in chickdom: thou shalt investigate every loud noise. When we start chopping in our woods the chicks at once appear and stay until the felled tree or riven log has exposed new insect eggs or pupae for their delectation. The discharge of a gun will likewise summon chicks, but with less satisfactory dividends.

What served as their dinner bell before the day of axes, mauls, and guns? Presumably the crash of falling trees. In December 1940, an ice-storm felled an extraordinary number of dead snags and living limbs in our woods. Our chicks scoffed at the trap for a month, being replete with the dividends of the storm.

65290 has long since gone to his reward. I hope that in his new woods, great oaks full of ants' eggs keep falling all day long, with never a wind to ruffle his composure or take the edge off his appetite. And I hope that he still wears my band.

Part II
The Quality of Landscape

Wisconsin

Marshland Elegy

A dawn wind stirs on the great marsh. With almost imperceptible slowness it rolls a bank of fog across the wide morass. Like the white ghost of a glacier the mists advance, riding over phalanxes of tamarack, sliding across bogmeadows heavy with dew. A single silence hangs from horizon to horizon.

Out of some far recess of the sky a tinkling of little bells falls soft upon the listening land. Then again silence. Now comes a baying of some sweet-throated hound, soon the clamor of a responding pack. Then a far clear blast of hunting horns, out of the sky into the fog.

High horns, low horns, silence, and finally a pandemonium of trumpets, rattles, croaks, and cries that almost shakes the bog with its nearness, but without yet disclosing whence it comes. At last a glint of sun reveals the approach of a great echelon of birds. On motionless wing they emerge from the lifting mists, sweep a final arc of sky, and settle in clangorous descending spirals to their feeding grounds. A new day has begun on the crane marsh.

A sense of time lies thick and heavy on such a place. Yearly since the ice age it has awakened each spring to the clangor of cranes. The peat layers that comprise the bog are laid down in the basin of an ancient lake. The cranes stand, as it were, upon the sodden pages of their own history. These peats are the compressed remains of the mosses that clogged the pools, of the tamaracks that spread over the moss, of the cranes that bugled

over the tamaracks since the retreat of the ice sheet. An endless caravan of generations has built of its own bones this bridge into the future, this habitat where the oncoming host again may live and breed and die.

To what end? Out on the bog a crane, gulping some luckless frog, springs his ungainly hulk into the air and flails the morning sun with mighty wings. The tamaracks re-echo with his bugled certitude. He seems to know.

Our ability to perceive quality in nature begins, as in art, with the pretty. It expands through successive stages of the beautiful to values as yet uncaptured by language. The quality of cranes lies, I think, in this higher gamut, as yet beyond the reach of words.

This much, though, can be said: our appreciation of the crane grows with the slow unraveling of earthly history. His tribe, we now know, stems out of the remote Eocene. The other members of the fauna in which he originated are long since entombed within the hills. When we hear his call we hear no mere bird. He is the symbol of our untamable past, of that in credible sweep of millennia which underlies and conditions the daily affairs of birds and men.

And so they live and have their being—these cranes—not in the constricted present, but in the wider reaches of evolutionary time. Their annual return is the ticking of the geologic clock. Upon the place of their return they confer a peculiar distinction. Amid the endless mediocrity of the commonplace, a crane marsh holds a paleontological patent of nobility, won in the march of aeons, and revocable only by shotgun. The sadness discernible in some marshes arises, perhaps, from their once having harbored cranes. Now they stand humbled, adrift in history.

Some sense of this quality in cranes seems to have been felt by sportsmen and ornithologists of all ages. Upon such quarry as this the Holy Roman Emperor Frederick loosed his gyrfalcons. Upon such quarry as this once swooped the hawks of Kublai Khan. Marco Polo tells us: 'He derives the highest amusement from sporting with gyrfalcons and hawks. At Changanor the Khan has a great Palace surrounded by a fine plain where are found cranes in great numbers. He causes millet and other grains to be sown in order that the birds may not want.'

The ornithologist Bengt Berg, seeing cranes as a boy upon the Swedish heaths, forthwith made them his life work. He followed them to Africa and discovered their winter retreat on the White Nile. He says of his first encounter: 'It was a spectacle which eclipsed the flight of the roc in the Thousand and One Nights.'

When the glacier came down out of the north, crunching hills and gouging valleys, some adventuring rampart of the ice climbed the Baraboo Hills and fell back into the outlet gorge of the Wisconsin River. The swollen waters backed up and formed a lake half as long

as the state, bordered on the east by cliffs of ice, and fed by the torrents that fell from melting mountains. The shorelines of this old lake are still visible; its bottom is the bottom of the great marsh.

The lake rose through the centuries, finally spilling over east of the Baraboo range. There it cut a new channel for the river, and thus drained itself. To the residual lagoons came the cranes, bugling the defeat of the retreating winter, summoning the on-creeping host of living things to their collective task of marshbuilding. Floating bogs of sphagnum moss clogged the lowered waters, filled them. Sedge and leatherleaf, tamarack and spruce successively advanced over the bog, anchoring it by their root fabric, sucking out its water, making peat. The lagoons disappeared, but not the cranes. To the moss-meadows that replaced the ancient waterways they returned each spring to dance and bugle and rear their gangling sorrel-colored young. These, albeit birds, are not properly called chicks, but colts. I cannot explain why. On some dewy June morning watch them gambol over their ancestral pastures at the heels of the roan mare, and you will see for yourself.

One year not long ago a French trapper in buckskins pushed his canoe up one of the moss-clogged creeks that thread the great marsh. At this attempt to invade their miry stronghold the cranes gave vent to loud and ribald laughter. A century or two later Englishmen came in covered wagons. They chopped clearings in the timbered moraines that border the marsh, and in them planted corn and buckwheat. They did not intend, like a Great Khan at Changanor, to feed the cranes. But the cranes do not question the intent of glaciers, emperors, or pioneers. They ate the grain, and when some irate farmer failed to concede their usufruct in his corn, they trumpeted a warning and sailed across the marsh to another farm.

There was no alfalfa in those days, and the hillfarms made poor hay land, especially in dry years. One dry year someone set a fire in the tamaracks. The burn grew up quickly to bluejoint grass, which, when cleared of dead trees, made a dependable hay meadow. After that, each August, men appeared to cut hay. In winter, after the cranes had gone South, they drove wagons over the frozen bogs and hauled the hay to their farms in the hills. Yearly they plied the marsh with fire and axe, and in two short decades hay meadows dotted the whole expanse.

Each August when the haymakers came to pitch their camps, singing and drinking and lashing their teams with whip and tongue, the cranes whinnied to their colts and retreated to the far fastnesses. 'Red shitepokes' the haymakers called them, from the rusty hue which at that season often stains the battleshipgray of crane plumage. After the hay was stacked and the marsh again their own, the cranes returned, to call down out of October skies the migrant flocks from Canada. Together they wheeled over the new-cut stubbles and raided

the corn until frosts gave the signal for the winter exodus.

These haymeadow days were the Arcadian age for marsh dwellers. Man and beast, plant and soil lived on and with each other in mutual toleration, to the mutual benefit of all. The marsh might have kept on producing hay and prairie chickens, deer and muskrat, crane-music and cranberries forever.

The new overlords did not understand this. They did not include soil, plants, or birds in their ideas of mutuality. The dividends of such a balanced economy were too modest. They envisaged farms not only around, but in the marsh. An epidemic of ditchdigging and land-booming set in. The marsh was gridironed with drainage canals, speckled with new fields and farmsteads.

But crops were poor and beset by frosts, to which the expensive ditches added an aftermath of debt. Farmers moved out. Peat beds dried, shrank, caught fire. Sun-energy out of the Pleistocene shrouded the countryside in acrid smoke. No man raised his voice against the waste, only his nose against the smell. After a dry summer not even the winter snows could extinguish the smoldering marsh. Great pockmarks were burned into field and meadow, the scars reaching down to the sands of the old lake, peat-covered these hundred centuries. Rank weeds sprang out of the ashes, to be followed after a year or two by aspen scrub. The cranes were hard put, their numbers shrinking with the remnants of unburned meadow. For them, the song of the power shovel came near being an elegy. The high priests of progress knew nothing of cranes, and cared less. What is a species more or less among engineers? What good is an undrained marsh anyhow?

For a decade or two crops grew poorer, fires deeper, wood-fields larger, and cranes scarcer, year by year. Only reflooding, it appeared, could keep the peat from burning. Meanwhile cranberry growers had, by plugging drainage ditches, reflooded a few spots and obtained good yields. Distant politicians bugled about marginal land, over-production, unemployment relief, conservation. Economists and planners came to look at the marsh. Surveyors, technicians, CCC's, buzzed about. A counter-epidemic of reflooding set in. Government bought land, resettled farmers, plugged ditches wholesale. Slowly the bogs are rewetting. The firepocks become ponds. Grass fires still burn, but they can no longer burn the wetted soil.

All this, once the CCC camps were gone, was good for cranes, but not so the thickets of scrub popple that spread inexorably over the burns, and still less the maze of new roads that inevitably follow governmental conservation. To build a road is so much simpler than to think of what the country really needs. A roadless marsh is seemingly as worthless to the alphabetical conservationist as an undrained one was to the empire-builders. Solitude, the one natural resource still undowered of alphabets, is so far recognized as valuable only by

ornithologists and cranes.

Thus always does history, whether of marsh market place, end in paradox. The ultimate value in these marshes is wildness, and the crane is wildness incarnate. But all conservation of wildness is self-defeating, for to cherish we must see and fondle, and when enough have seen and fondled, there is no wilderness left to cherish.

Some day, perhaps in the very process of our benefactions, perhaps in the fullness of geologic time, the last crane will trumpet his farewell and spiral skyward from the great marsh. High out of the clouds will fall the sound of hunting horns, the baying of the phantom pack, the tinkle of little bells, and then a silence never to be broken, unless perchance in some far pasture of the Milky Way.

The Sand Counties

Every profession keeps a small herd of epithets, and needs a pasture where they may run at large. Thus economists must find free range somewhere for their pet aspersions, such as submarginality, regression, and institutional rigidity. Within the ample reaches of the Sand Counties these economic terms of reproach find beneficial exercise, free pasturage, and immunity from the gadflies of critical rebuttal.

Soil experts, likewise, would have a hard life without the Sand Counties. Where else would their podzols, gleys, and anaerobics find a living?

Social planners have, of late years, come to use the Sand counties for a different, albeit somewhat parallel, purpose. The sandy region serves as a pale blank area, of pleasing shape and size, on those polka-dot maps where each dot represents ten bathtubs, or five women's auxiliaries, or one mile of black-top, or a share in a blooded bull. Such maps would become monotonous if stippled uniformly.

In short, the Sand Counties are poor.

Yet in the 1930's, when the alphabetical uplifts galloped like forty horsemen across the Big Flats, exhorting the sand farmers to resettle elsewhere, these benighted folk did not want to go, even when baited with 3 percent at the federal land bank. I began to wonder why, and finally, to settle the question, I bought myself a sand farm.

Sometimes in June, when I see unearned dividends of dew hung on every lupine, I have doubts about the real poverty of the sands. On solvent farmlands lupines do not even grow, much less collect a daily rainbow of jewels. If they did, the weed-control officer, who seldom sees a dewy dawn, would doubtless insist that they be cut. Do economists know about lupines?

Perhaps the farmers who did not want to move out of the Sand Counties had some deep reason, rooted far back in history, for preferring to stay. I am reminded of this every

April when the pasque-flowers bloom on every gravelly ridge. Pasques do not say much, but I infer that their preference harks back to the glacier that put the gravel there. Only gravel ridges are poor enough to offer pasques full elbowroom in April sun. They endure snows, sleets, and bitter winds for the privilege of blooming alone.

There are other plants who seem to ask of this world not riches but room. Such is the little sandwort that throws a white-lace cap over the poorest hilltops just before the lupines splash them with blue. Sandworts simply refuse to live on a good farm, even on a very good farm, complete with rock garden and begonias. And then there is the little Linaria, so small, so slender, and so blue that you don't even see it until it is directly underfoot; who ever saw a Linaria except on a sandblow?

Finally there is Draba, beside whom even Linaria is tall and ample. I have never met an economist who knows Draba, but if I were one I should do all my economic pondering lying prone on the sand, with Draba at nose-length.

There are birds that are found only in the Sand Counties, for reasons sometimes easy, sometimes difficult, to guess. The clay-colored sparrow is there, for the clear reason that he is enamored of jackpines, and jackpines of sand. The sandhill crane is there, for the clear reason that he is enamored of solitude, and there is none left elsewhere. But why do woodcocks prefer to nest in the sandy regions? Their preference is rooted in no such mundane matter as food, for earthworms are far more abundant on better soils. After years of study, I now think I know the reason. The male woodcock, while doing his peenting prologue to the sky dance, is like a short lady in high heels: he does not show up to advantage in dense tangled ground cover. But on the poorest sand-streak of the poorest pasture or meadow of the Sand Counties, there is, in April at least, no ground cover at all, save only moss, Draba, cardamine, sheep-sorrel, and Antennaria, all negligible impediments to a bird with short legs. Here the male woodcock can puff and strut and mince, not only without let or hindrance, but in full view of his audience, real or hopedfor. This little circumstance, important for only an hour a day, for only one month of the year, perhaps for only one of the two sexes, and certainly wholly irrelevant to economic standards of living, determines the woodcock's choice of a home.

The economists have not yet tried to resettle woodcocks.

Odyssey

X had marked time in the limestone ledge since the Paleozoic seas covered the land. Time, to an atom locked in a rock, does not pass.

The break came when a bur-oak root nosed down a crack and began prying and sucking. In the flash of a century the rock decayed, and X was pulled out and up into the

world of living things. He helped build a flower, which became an acorn, which fattened a deer, which fed an Indian, all in a single year.

From his berth in the Indian's bones, X joined again in chase and flight, feast and famine, hope and fear. He felt these things as changes in the little chemical pushes and pulls that tug timelessly at every atom. When the Indian took his leave of the prairie, X moldered briefly underground, only to embark on a second trip through the bloodstream of the land.

This time it was a rootlet of bluestem that sucked him up and lodged him in a leaf that rode the green billows of the prairie June, sharing the common task of hoarding sunlight. To this leaf also fell an uncommon task: flicking shadows across a plover's eggs. The ecstatic plover, hovering overhead, poured praises on something perfect: perhaps the eggs, perhaps the shadows, or perhaps the haze of pink phlox that lay on the prairie.

When the departing plovers set wing for the Argentine, all the bluestems waved farewell with tall new tassels. When the first geese came out of the north and all the bluestems glowed wine-red, a forehanded deermouse cut the leaf in which X lay, and buried it in an underground nest, as if to hide a bit of Indian summer from the thieving frosts. But a fox detained the mouse, molds and fungi took the nest apart, and X lay in the soil again, footloose and fancy-free.

Next he entered a tuft of side-oats grama, a buffalo, a buffalo chip, and again the soil. Next a spiderwort, a rabbit, and an owl. Thence a tuft of sporobolus.

All routines come to an end. This one ended with a prairie fire, which reduced the prairie plants to smoke, gas, and ashes. Phosphorus and potash atoms stayed in the ash, but the nitrogen atoms were gone with the wind. A spectator might, at this point, have predicted an early end of the biotic drama, for with fires exhausting the nitrogen, the soil might well have lost its plants and blown away.

But the prairie had two strings to its bow. Fires thinned its grasses, but they thickened its stand of legumi-nous herbs: prairie clover, bush clover, wild bean, vetch, lead-plant, trefoil, and Baptisia, each carrying its own bacteria housed in nodules on its rootlets. Each nodule pumped nitrogen out of the air into the plant, and then ultimately into the soil. Thus the prairie savings bank took in more nitrogen from its legumes than it paid out to its fires. That the prairie is rich is known to the humblest deermouse; why the prairie is rich is a question seldom asked in all the still lapse of ages.

Between each of his excursions through the biota, X lay in the soil and was carried by the rains, inch by inch, downhill. Living plants retarded the wash by impounding atoms; dead plants by locking them to their decayed tissues. Animals ate the plants and carried them briefly uphill or downhill, depending on whether they died or defecated higher or

lower than they fed. No animal was aware that the altitude of his death was more important than his manner of dying. Thus a fox caught a gopher in a meadow, carrying X uphill to his bed on the brow of a ledge, where an eagle laid him low. The dying fox sensed the end of his chapter in foxdom, but not the new beginning in the odyssey of an atom.

An Indian eventually inherited the eagle's plumes, and with them propitiated the Fates, whom he assumed had a special interest in Indians. It did not occur to him that they might be busy casting dice against gravity; that mice and men, soils and songs, might be merely ways to retard the march of atoms to the sea.

One year, while X lay in a cottonwood by the river, he was eaten by a beaver, an animal that always feeds higher than he dies. The beaver starved when his pond dried up during a bitter frost. X rode the carcass down the spring freshet, losing more altitude each hour than heretofore in a century. He ended up in the silt of a backwater bayou, where he fed a crayfish, a coon, and then an Indian, who laid him down to his last sleep in a mound on the riverbank. One spring an oxbow caved the bank, and after one short week of freshet X lay again in his ancient prison, the sea.

An atom at large in the biota is too free to know freedom; an atom back in the sea has forgotten it. For every atom lost to the sea, the prairie pulls another out of the decaying rocks. The only certain truth is that its creatures must suck hard, live fast, and die often, lest its losses exceed its gains.

It is the nature of roots to nose into cracks. When Y was thus released from the parent ledge, a new animal had arrived and begun redding up the prairie to fit his own notions of law and order. An oxteam turned the prairie sod, and Y began a succession of dizzy annual trips through a new grass called wheat.

The old prairie lived by the diversity of its plants and animals, all of which were useful because the sum total of their co-operations and competitions achieved continuity. But the wheat farmer was a builder of categories; to him only wheat and oxen were useful. He saw the useless pigeons settle in clouds upon his wheat, and shortly cleared the skies of them. He saw the chinch bugs take over the stealing job, and fumed because here was a useless thing too small to kill. He failed to see the downward wash of over-wheated loam, laid bare in spring against the pelting rains. When soil-wash and chinch bugs finally put an end to wheat farming, Y and his like had already traveled far down the watershed.

When the empire of wheat collapsed, the settler took a leaf from the old prairie book: he impounded his fertility in livestock, he augmented it with nitrogen-pumping alfalfa, and he tapped the lower layers of the loam with deep-rooted corn.

But he used his alfalfa, and every other new weapon against wash, not only to hold his old plowings, but also to exploit new ones which, in turn, needed holding.

So, despite alfalfa, the black loam grew gradually thinner. Erosion engineers built dams and terraces to hold it. Army engineers built levees and wing-dams to flush it from the rivers. The rivers would not flush, but raised their beds instead, thus choking navigation. So the engineers built pools like gigantic beaver ponds, and Y landed in one of these, his trip from rock to river completed in one short century.

On first reaching the pool, Y made several trips through water plants, fish, and waterfowl. But engineers build sewers as well as dams, and down them comes the loot of all the far hills and the sea. The atoms that once grew pasque-flowers to greet the returning plovers now lie inert, confused, imprisoned in oily sludge.

Roots still nose among the rocks. Rains still pelt the fields. Deermice still hide their souvenirs of Indian summer. Old men who helped destroy the pigeons still recount the glory of the fluttering hosts. Black and white buffalo pass in and out of red barns, offering free rides to itinerant atoms.

On a Monument to the Pigeon

We have erected a monument to commemorate the funeral of a species. It symbolizes our sorrow. We grieve because no living man will see again the onrushing phalanx of victorious birds, sweeping a path for spring across the March skies, chasing the defeated winter from all the woods and prairies of Wisconsin.

Men still live who, in their youth, remember pigeons. Trees still live who, in their youth, were shaken by a living wind. But a decade hence only the oldest oaks will remember, and at long last only the hills will know.

There will always be pigeons in books and in museums, but these are effigies and images, dead to all hardships and to all delights. Book-pigeons cannot dive out of a cloud to make the deer run for cover, or clap their wings in thunderous applause of mastladen woods. Book-pigeons cannot breakfast on newmown wheat in Minnesota, and dine on blueberries in Canada. They know no urge of seasons; they feel no kiss of sun, no lash of wind and weather. They live forever by not living at all.

Our grandfathers were less well-housed, well-fed, well-clothed than we are. The strivings by which they bettered their lot are also those which deprived us of pigeons. Perhaps we now grieve because we are not sure, in our hearts, that we have gained by the exchange. The gadgets of industry bring us more comforts than the pigeons did, but do they add as much to the glory of the spring?

It is a century now since Darwin gave us the first glimpse of the origin of species. We know now what was unknown to all the preceding caravan of generations: that men are only fellow-voyagers with other creatures in the odyssey of evolution. This new knowledge

should have given us, by this time, a sense of kinship with fellow-creatures; a wish to live and let live; a sense of wonder over the magnitude and duration of the biotic enterprise.

Above all we should, in the century since Darwin, have come to know that man, while now captain of the adventuring ship, is hardly the sole object of its quest, and that his prior assumptions to this effect arose from the simple necessity of whistling in the dark.

These things, I say, should have come to us. I fear they have not come to many.

For one species to mourn the death of another is a new thing under the sun. The Cro-Magnon who slew the last mammoth thought only of steaks. The sportsman who shot the last pigeon thought only of his prowess. The sailor who clubbed the last auk thought of nothing at all. But we, who have lost our pigeons, mourn the loss. Had the funeral been ours, the pigeons would hardly have mourned us. In this fact, rather than in Mr. Du Pont's nylons or Mr. Vannevar Bush's bombs, lies objective evidence of our superiority over the beasts.

This monument, perched like a duckhawk on this cliff, will scan this wide valley, watching through the days and years. For many a March it will watch the geese go by, telling the river about clearer, colder, lonelier waters on the tundra. For many an April it will see the redbuds come and go, and for many a May the flush of oak-blooms on a thousand hills. Questing wood ducks will search these basswoods for hollow limbs; golden protho-notaries will shake golden pollen from the river willows, Egrets will pose on these sloughs in August; plovers will whistle from September skies. Hickory nuts will plop into October leaves, and hail will rattle in November woods. But no pigeons will pass, for there are no pigeons, save only this flightless one, graven in bronze on this rock. Tourists will read this inscription, but their thoughts will not take wing.

We are told by economic moralists that to mourn the pigeon is mere nostalgia; that if the pigeoners had not done away with him, the farmers would ultimately have been obliged, in self-defense, to do so.

This is one of those peculiar truths that are valid, but not for the reasons alleged.

The pigeon was a biological storm. He was the lightning that played between two opposing potentials of intolerable intensity: the fat of the land and the oxygen of the air. Yearly the feathered tempest roared up, down, and across the continent, sucking up the laden fruits of forest and prairie, burning them in a traveling blast of life. Like any other chain reaction, the pigeon could survive no dimunution of his own furious intensity. When the pigeoners subtracted from his numbers, and the pioneers chopped gaps in the continuity of his fuel, his flame guttered out with hardly a sputter or even a wisp of smoke.

Today the oaks still flaunt their burden at the sky, but the feathered lightning is no more. Worm and weevil must now perform slowly and silently the biological task that once

drew thunder from the firmament.

The wonder is not that the pigeon went out, but that he ever survived through all the millennia of pre-Babbittian time.

The pigeon loved his land: he lived by the intensity of his desire for clustered grape and bursting beechnut, and by his contempt of miles and seasons. Whatever Wisconsin did not offer him gratis today, he sought and found tomorrow in Michigan, or Labrador, or Tennessee. His love was for present things, and these things were present somewhere; to find them required only the free sky, and the will to ply his wings.

To love what was is a new thing under the sun, unknown to most people and to all pigeons. To see America as history, to conceive of destiny as a becoming, to smell a hickory tree through the still lapse of ages—all these things are possible for us, and to achieve them takes only the free sky, and the will to ply our wings. In these thing, and not in Mr. Bush's bombs and Mr. Du Pont's nylons, lies objective evidence of our superiority over the beasts.

Flambeau

People who have never canoed a wild river, or who have done so only with a guide in the stern, are apt to assume that novelty, plus healthful exercise, account for the value of the trip. I thought so too, until I met the two college boys on the Flambeau.

Supper dishes washed, sat on the bank watching a buck dunking for water plants on the far shore. Soon the buck raised his head, cocked his ears upstream, and then bounded for cover.

Around the bend now came the cause of his alarm: two boys in a canoe. Spying us, they edged in to pass the time of day.

'What time is it?' was their first question. They explained that their watches had run down, and for the first time in their lives there was no clock, whistle, or radio to set watches by. For two days they had lived by 'sun-time,' and were getting a thrill out of it. No servant brought them meals: they got their meat out of the river, or went without. No traffic cop whistled them off the hidden rock in the next rapids. No friendly roof kept them dry when they misguessed whether or not to pitch the tent. No guide showed them which camping spots offered a nightlong breeze, and which a nightlong misery of mosquitoes; which firewood made clean coals, and which only smoke.

Before our young adventurers pushed off downstream, we learned that both were slated for the Army upon the conclusion of their trip. Now the motif was clear. This trip was their first and last taste of freedom, an interlude between two regimentations: the campus and the barracks. The elemental simplicities of wilderness travel were thrills not only because of their

novelty, but because they represented complete freedom to make mistakes, The wilderness gave them their first taste of those rewards and penalties for wise and foolish acts which every woodsman faces daily, but against which civilization has built a thousand buffers. These boys were 'on their own' in this particular sense.

Perhaps every youth needs an occasional wilderness trip, in order to learn the meaning of this particular freedom.

When I was a small boy, my father used to describe all choice camps, fishing waters, and woods as 'nearly as good as the Flambeau.' When I finally launched my own canoe in this legendary stream, I found it up to expectations as a river, but as a wilderness it was on its last legs. New cottages, resorts, and highway bridges were chopping up the wild stretches into shorter and shorter segments. To run down the Flambeau was to be mertally whip-sawed between alternating impressions: no sooner had you built up the mental illusion of being in the wilds than you sighted a boat-landing, and soon you were coasting past some cottager'speonies.

Safely past the peonies, a buck bounding up the bank helped us to restore the wilder-ness flavor, and the next rapids finished the job. But staring at you beside the pool below was a synthetic log cabin, complete with composition roof, 'Bide-A-Wee' signboard, and rustic pergola for afternoon bridge.

Paul Bunyan was too busy a man to think about posterity, but if he had asked to reserve a spot for posterity to see what the old north woods looked like, he likely would have chosen the Flambeau, for here the cream of the white pine grew on the same acres with the cream of the sugar maple, yellow birch, and hemlock. This rich intermixture of pine and hardwoods was and is uncommon. The Flambeau pines, growing on a hardwood soil richer than pines are ordinarily able to occupy, were so large and valuable, and so close to a good log-driving stream ,that they were cut at an early day, as evidenced by the decayed condition of their giant stumps. Only defective pines were spared, but there are enough of these alive today to punctuate the skyline of the Flambeau with many a green monument to bygone days.

The hardwood logging came much later; in fact, the last big hardwood company 'pulled steel' on its last logging railroad only a decade ago. All that remains of that company today is a 'land-office' in its ghost town, selling off its cutovers to hopeful settlers. Thus died an epoch in American history: the epoch of cut out and get out.

Like a coyote rummaging in the offal of a deserted camp, the post-logging economy of the Flambeau subsists on the leavings of its own past. 'Gypo' pulpwood cutters nose around in the slashings for the occasional small hemlock overlooked in the main logging. A portable sawmill crew dredges the riverbed for sunken 'deadheads,' many of which drowned

during the hell-for-leather log-drives of the glory days. Rows of these mud-stained corpses are drawn up on shore at the old landings—all in perfect condition, and some of great value, for no such pine exists in the north woods today. Post and pole cutters strip the swamps of white cedar; the deer follow them around and strip the felled tops of their foliage. Everybody and everything subsists on leavings.

So complete are all these scavengings that when the modern cottager builds a log cabin, he uses imitation logs sawed out of slab piles in Idaho or Oregon, and hauled to Wisconsin woods in a freight car. The proverbial coals to Newcastle seem a mild irony compared with this.

Yet there remains the river, in a few spots hardly changed since Paul Bunyan's day; at early dawn, before the motor boats awaken, one can still hear it singing in the wilderness. There are a few sections of uncut timber, luckily state-owned. And there is a considerable remnant of wildlife: muskellunge, bass, and sturgeon in the river; mergansers, black ducks, and wood ducks breeding in the sloughs; ospreys, eagles, and ravens cruising overhead. Everywhere are deer, perhaps too many: I counted 52 in two days afloat. A wolf or two still roams the upper Flambeau, and there is a trapper who claims he saw a marten, though no marten skin has come out of the Flambeau since 1900.

Using these remnants of the wilderness as a nucleus, the State Conservation Department began, in 1943, to rebuild a fifty-mile stretch of river as a wild area for the use and enjoyment of young Wisconsin. This wild stretch is set in a matrix of state forest, but there is to be no forestry on the river banks, and as few road crossings as possible. Slowly, patiently, and sometimes expensively the Conservation Department has been buying land, removing cottages, warding off unnecessary roads, and in general pushing the clock back, as far as possible, toward the original wilderness.

The good soil that enabled the Flambeau to grow the best cork pine for Paul Bunyan likewise enabled Rusk County, during recent decades, to sprout a dairy industry. These dairy farmers wanted cheaper electric power than that offered by local power companies, hence they organized a co-operative REA and in 1947 applied for a power dam, which, when built, would clip off the lower reaches of a fifty-mile stretch in process of restoration as canoe-water.

There was a sharp and bitter political fight. The Legislature, sensitive to farmer-pressure but oblivious of wilderness values, not only approved the REA dam, but deprived the Conservation Commission of any future voice in the disposition of power sites. It thus seems likely that the remaining canoe-water on the Flambeau, as well as every other stretch of wild river in the state, will ultimately be harnessed for power.

Perhaps our grandsons, having never seen a wild river, will never miss the chance to set a canoe in singing waters.

Deadening

The old oak had been girdled and was dead.

There are degrees of death in abandoned farms. Some old houses cock an eye at you as if to say 'Somebody will move in. Wait and see!

But this farm was different. Girdling the old oak to squeeze one last crop out of the barnyard has the same finality as burning the furniture to keep warm.

Illinois and Iowa

Illinois Bus Ride

A farmer and his son are out in the yard, pulling a crosscut saw through the innards of an ancient cottonwood. The tree is so large and so old that only a foot of blade is left to pull on.

Time was when that tree was a buoy in the prairie sea. George Rogers Clark may have camped under it; buffalo may have nooned in its shade, switching flies. Every spring it roosted fluttering pigeons. It is the best historical library short of the State College, but once a year it sheds cotton on the farmer's window screens. Of these two facts, only the second is important.

The State College tells farmers that Chinese elms do not clog screens, and hence are preferable to cottonwoods. It likewise pontificates on cherry preserves, Bang's disease, hybrid corn, and beautifying the farm home. The only thing it does not know about farms is where they came from. Its job is to make Illinois safe for soybeans.

I am sitting in a 60-mile-an-hour bus sailing over a highway originally laid out for horse and buggy. The ribbon of concrete has been widened and widened until the field fences threaten to topple into the road cuts. In the narrow thread of sod between the shaved banks and the toppling fences grow the relics of what once was Illinois: the prairie.

No one in the bus sees these relics. A worried farmer, his fertilizer bill projecting from his shirt pocket, looks blankly at the lupines, lespedezas, or Baptisias that originally pumped nitrogen out of the prairie air and into his black loamy acres. He does not distinguish them from the parvenu quack-grass in which they grow. Were I to ask him why his corn makes a hundred bushels, while that of non-prairie states does well to make thirty, he would probably answer that Illinois soil is better. Were I to ask him the name of that white spike of pea-like flowers hugging the fence, he would shake his head. A weed, likely.

A cemetery flashes by, its borders alight with prairie puccoons. There are no puccoons

elsewhere; dogfennels and sowthistles supply the yellow motif for the modern landscape. Puccoons converse only with the dead.

Through the open window I hear the heart-stirring whistle of an upland plover; time was when his forebears followed the buffalo as they trudged shoulderdeep through an illimitable garden of forgotten blooms. A boy spies the bird and remarks to his father: there goes a snipe.

The sign says, 'You are entering the Green River Soil Conservation District.' In smaller type is a list of who is co-operating; the letters are too small to be read from a moving bus. It must be a roster of who's who in conservation.

The sign is neatly painted. It stands in a creekbottom pasture so short you could play golf on it. Near by is the graceful loop of an old dry creek bed. The new creek bed is ditched straight as a ruler; it has been 'uncurled' by the county engineer to hurry the run-off. On the hill in the background are contoured strip-crops; they have been 'curled' by the erosion engineer to retard the run-off. The water must be confused by so much advice.

Everything on this farm spells money in the bank. The farmstead abounds in fresh paint, steel, and concrete. A date on the barn commemorates the founding fathers. The roof bristles with lightning rods, the weathercock is proud with new gilt. Even the pigs look solvent.

The old oaks in the woodlot are without issue. There are no hedges, brush patches, fencerows, or other signs of shiftless husbandry. The cornfield has fat steers, but probably no quail. The fences stand on narrow ribbons of sod; whoever plowed that close to barbed wires must have been saying, 'Waste not, want not.'

In the creek-bottom pasture, flood trash is lodged high in the bushes. The creek banks are raw, chunks of Illinois have sloughed off and moved seaward. Patches of giant ragweed mark where freshets have thrown down the silt they could not carry. Just who is solvent? For how long?

The highway stretches like a taut tape across the corn, oats, and clover fields; the bus ticks off the opulent miles; the passengers talk and talk and talk. About what? About baseball, taxes, sons-in-law, movies, motors, and funerals, but never about the heaving groundswell of Illinois that washes the windows of the speeding bus. Illinois has no genesis, no history, no shoals or deeps, no tides of life and death. To them Illinois is only the sea on which they sail to ports unknown.

Red Legs Kicking

When I call to mind my earliest impressions, I wonder whether the process ordinarily referred to as growing up is not actually a process of growing down; whether experience, so

much touted among adults as the thing children lack, is not actually a progressive dilution of the essentials by the trivialities of living. This much at least is sure: my earliest impressions of wildlife and its pursuit retain a vivid sharpness of form, color, and atmosphere that half a century of professional wildlife experience has failed to obliterate or to improve upon.

Like most aspiring hunters, I was given, at an early age, a single-barreled shotgun and permission to hunt rabbits. One winter Saturday, en route to my favorite rabbit patch, I noticed that the lake, then covered with ice and snow, had developed a small 'airhole' at a point where a windmill discharged warm water from the shore. All ducks had long since departed southward, but I then and there formulated my first ornithological hypothesis: if there were a duck left in the region, he (or she) would inevitably, sooner or later, drop in at this airhole. I suppressed my appetite for rabbits (then no mean feat), sat down in the cold smartweeds on the frozen mud, and waited.

I waited all afternoon, growing colder with each passing crow, and with each rheumatic groan of the laboring windmill. Finally, at sunset, a lone black duck came out of the west, and without even a preliminary circling of the airhole, set his wings and pitched downward.

I cannot remember the shot; I remember only my unspeakable delight when my first duck hit the snowy ice with a thud and lay there, belly up, red legs kicking.

When my father gave me the shotgun, he said I might hunt partridges with it, but that I might not shoot them from trees. I was old enough, he said, to learn wing-shooting.

My dog was good at treeing partridge, and to forego a sure shot in the tree in favor of a hopeless one at the fleeing bird was my first exercise in ethical codes. Compared with a treed partridge, the devil and his seven kingdoms was a mild temptation.

At the end of my second season of featherless partridge-hunting I was walking, one day, through an aspen thicket when a big partridge rose with a roar at my left, and, towering over the aspens, crossed behind me, hell-bent for the nearest cedar swamp. It was a swinging shot of the sort the partridge-hunter dreams about, and the bird tumbled dead in a shower of feathers and golden leaves.

I could draw a map today of each clump of red bunchberry and each blue aster that adorned the mossy spot where he lay, my first partridge on the wing. I suspect my present affection for bunchberries and asters dates from that moment.

Arizona and New Mexico

On Top

When I first lived in Arizona, the White Mountain was a horseman's world. Except

along a few main routes, it was too rough for wagons. There were no cars. It was too big for foot travel; even sheepherders rode. Thus by elimination, the county-sized plateau known as 'on top' was the exclusive domain of the mounted man: mounted cowman, mounted sheepman, mounted forest officer, mounted trapper, and those unclassified mounted men of unknown origin and uncertain destination always found on frontiers. It is difficult for this generation to understand this aristocracy of space based upon transport.

No such thing existed in the railroad towns two days to the north, where you had your choice of travel by shoe leather, burro, cowhorse, buckboard, freight wagon, caboose, or Pullman. Each of these modes of movement corresponded to a social caste, the members of which spoke a distinctive vernacular, wore distinctive clothes, ate distinctive food, and patronized different saloons. Their only common denominator was a democracy of debt to the general store, and a communal wealth of Arizona dust and Arizona sunshine.

As one proceeded southward across the plains and mesas toward the White Mountain, these castes dropped out one by one as their respective modes of travel became impossible, until finally, 'on top,' the horsemen ruled the world.

Henry Ford's revolution has of course abolished all this. Today the plane has given even the sky to Tom, Dick, and Harry.

In winter the top of the mountain was denied even to horsemen, for the snow piled deep on the high meadows, and the little canyons up which the only trails ascended drifted full to the brim. In May every canyon roared with an icy torrent, but soon thereafter you could 'top out'—if your horse had the heart to climb half a day through knee-deep mud.

In the little village at the foot of the mountain there existed, each spring, a tacit competition to be the first rider to invade the high solitudes. Many of us tried it, for reasons we did not stop to analyze. Rumor ran fast. Whoever did it first wore a kind of horseman's halo. He was 'man-of-the-year.'

The mountain spring, storybooks to the contrary notwithstanding, did not come with a rush. Balmy days alternated with bitter winds, even after the sheep had gone up. I have seen few colder sights than a drab gray mountain meadow, sprinkled with complaining ewes and half-frozen lambs, pelted by hail and snow. Even the gay nutcrackers humped their backs to these spring storms.

The mountain in summer had as many moods as there were days and weathers; the dullest rider, as well as his horse, felt these moods to the marrow of his bones.

On a fair morning the mountain invited you to get down and roll in its new grass and flowers (your less inhibited horse did just this if you failed to keep a tight rein), Every living thing sang, chirped, and burgeoned. Massive pines and firs, storm-tossed these many months, soaked up the sun in towering dignity. Tassel-eared squirrels, poker-faced but

exuding emotion with voice and tail, told you insistently what you already knew full well: that never had there been so rare a day, or so rich a solitude to spend it in.

An hour later, thunderheads may have blotted out the sun, while your erstwhile paradise cowered under the impending lash of lightning, rain, and hail. Black gloom hung poised, as over a bomb with the fuse lighted. Your horse jumped at every rolling pebble, every crackling twig. When you turned in the saddle to unlash your slicker, he shied, snorted, and trembled as if you were about to unfurl the scroll of an Apocalypse. When I hear anyone say he does not fear lightning, I still remark inwardly: he has never ridden The Mountain in July.

The explosions are fearsome enough, but more so are the smoking slivers of stone that sing past your ear when the bolt crashes into a rimrock. Still more so are the splinters that fly when a bolt explodes a pine. I remember one gleaming white one, 15 feet long, that stabbed deep into the earth at my feet and stood there humming like a tuning fork.

It must be poor life that achieves freedom from fear.

The top of the mountain was a great meadow, half a day's ride across, but do not picture it as a single amphitheater of grass, hedged in by a wall of pines. The edges of that meadow were scrolled, curled, and crenulated with an infinity of bays and coves, points and stringers, peninsulas and parks, each one of which differed from all the rest. No man knew them all, and every day's ride offered a gambler's chance of finding a new one. I say 'new' because one often had the feeling, riding into some flower-spangled cove, that if anyone had ever been here before, he must of necessity have sung a song, or written a poem.

This feeling of having this day discovered the incredible accounts, perhaps, for the profusion of initials, dates, and cattle brands inscribed on the patient bark of aspens at every mountain camp site. In these inscriptions one could, in any day, read the history of Homo texanus and his culture, not in the cold categories of anthropology, but in terms of the individual career of some founding father whose initials you recognized as the man whose son bested you at horsetrading, or whose daughter you once danced with. Here, dated in the 'nineties, was his simple initial, without brand, inscribed no doubt when he first arrived alone on the mountain as an itinerant cowpuncher. Next, a decade later, his initial plus brand; by that time he had become a solid citizen with an 'outfit,' acquired by thrift, natural increase, and perhaps a nimble rope. Next, only a few years old, you found his daughter's initial, inscribed by some enamored youth aspiring not only to the lady's hand, but to the economic succession.

The old man was dead now; in his later years his heart had thrilled only to his bank account and to the tally of his flocks and herds, but the aspen revealed that in his youth he too had felt the glory of the mountain spring.

The history of the mountain was written not only in aspen bark, but in its place names. Cow-country place names are lewd, humorous, ironic, or sentimental, but seldom trite. Usually they are subtle enough to draw inquiry from new arrivals, whereby hangs that web of tales which, full spun, constitutes the local folklore.

For example, there was 'The Boneyard,' a lovely meadow where bluebells arched over the half-buried skulls and scattered vertebrae of cows long since dead. Here in the 1880's a foolish cowman, newly arrived from the warm valleys of Texas, had trusted the allurements of the mountain summer and essayed to winter his herd on mountain hay. When the November storms hit, he and his horse had floundered out, but not his cows.

Again, there was 'The Campbell Blue,' a headwater of the Blue River to which an early cowman had brought himself a bride. The lady, tiring of rocks and trees, had yearned for a piano. A piano was duly fetched, a Campbell piano. There was only one mule in the county capable of packing it, and only one packer capable of the almost superhuman task of balancing such a load. But the piano failed to bring contentment; the lady decamped; and when the story was told me, the ranch cabin was already a ruin of sagging logs.

Again there was 'Frijole Cienega,' a marshy meadow walled in by pines, under which stood, in my day, a small log cabin used by any passer-by as an overnight camp. It was the unwritten law for the owner of such real estate to leave flour, lard, and beans, and for the passer-by to replenish such stock as he could. But one luckless traveler, trapped there for a week by storms, had found only beans. This breach of hospitality was sufficiently notable to be handed down to history as a place name.

Finally, there was 'Paradise Ranch,' an obvious platitude when read from a map, but something quite different when you arrived there at the end of a hard ride. It lay tucked away on the far side of a high peak, as any proper paradise should. Through its verdant meadows meandered a singing trout stream. A horse left for a month on this meadow waxed so fat that rain-water gathered in a pool on his back. After my first visit to Paradise Ranch I remarked to myself: what else could you call it?

Despite several opportunities to do so, I have never returned to the White Mountain. I prefer not to see what tourists, roads, sawmills, and logging railroads have done for it, or to it. I hear young people, not yet born when I first rode out 'on top,' exclaim about it as a wonderful place. To this, with an unspoken mental reservation, I agree.

Thinking Like a Mountain

A deep chesty bawl echoes from rimrock to rimrock, rolls down the mountain, and fades into the far blackness of the night. It is an outburst of wild defiant sorrow, and of contempt for all the adversities of the world.

Every living thing (and perhaps many a dead one as well) pays heed to that call. To the deer it is a reminder of the way of all flesh, to the pine a forecast of midnight scuffles and of blood upon the snow, to the coyote a promise of gleanings to come, to the cowman a threat of red ink at the bank, to the hunter a challenge of fang against bullet. Yet behind these obvious and immediate hopes and fears there lies a deeper meaning, known only to the mountain itself. Only the mountain has lived long enough to listen objectively to the howl of a wolf.

Those unable to decipher the hidden meaning know nevertheless that it is there, for it is felt in all wolf country, and distinguishes that country from all other land. It tingles in the spine of all who hear wolves by night, or who scan their tracks by day. Even without sight or sound of wolf, it is implicit in a hundred small events: the midnight whinny of a pack horse, the rattle of rolling rocks, the bound of a fleeing deer, the way shadows lie under the spruces. Only the ineducable tyro can fail to sense the presence or absence of wolves, or the fact that mountains have a secret opinion about them.

My own conviction on this score dates from the day I saw a wolf die. We were eating lunch on a high rimrock, at the foot of which a turbulent river elbowed its way. We saw what we thought was a doe fording the torrent, her breast awash in white water. When she climbed the bank toward us and shook out her tail, we realized our error: it was a wolf. A halfdozen others, evidently grown pups, sprang from the willows and all joined in a welcoming melee of wagging tails and playful maulings. What was literally a pile of wolves writhed and tumbled in the center of an open flat at the foot of our rimrock.

In those days we had never heard of passing up a chance to kill a wolf. In a second we were pumping lead into the pack, but with more excitement than accuracy: how to aim a steep downhill shot is always confusing. When our rifles were empty, the old wolf was down, and a pup was dragging a leg into impassable slide-rocks.

We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes—something known only to her and to the mountain. I was young then, and full of trigger-itch; I thought that because fewer wolves meant more deer, that no wolves would mean hunters' paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view.

Since then I have lived to see state after state extirpate its wolves. I have watched the face of many a newly wolfless mountain, and seen the south-facing slopes wrinkle with a maze of new deer trails. I have seen every edible bush and seedling browsed, first to anaemic desuetude, and then to death. I have seen every edible tree defoliated to the height of a saddlehorn. Such a mountain looks as if someone had given God a new pruning

shears, and forbidden Him all other exercise. In the end the starved bones of the hoped-for deer herd, dead of its own too-much, bleach with the bones of the dead sage, or molder under the high-lined junipers.

I now suspect that just as a deer herd lives in mortal fear of its wolves, so does a mountain live in mortal fear of its deer. And perhaps with better cause, for while a buck pulled down by wolves can be replaced in two or three years, a range pulled down by too many deer may fail of replacement in as many decades.

So also with cows. The cowman who cleans his range of wolves does not realize that he is taking over the wolf's job of trimming the herd to fit the range. He has not learned to think like a mountain. Hence we have dustbowls, and rivers washing the future into the sea.

We all strive for safety, prosperity, comfort, long life, and dullness. The deer strives with his supple legs, the cowman with trap and poison, the statesman with pen, the most of us with machines, votes, and dollars, but it all comes to the same thing: peace in our time. A measure of success in this is all well enough, and perhaps is a requisite to objective thinking, but too much safety seems to yield only danger in the long run. Perhaps this is behind Thoreau's dictum: In wildness is the salvation of the world. Perhaps this is the hidden meaning in the howl of the wolf, long known among mountains, but seldom perceived among men.

Escudilla

Life in Arizona was bounded under foot by grama grass, overhead by sky, and on the horizon by Escudilla.

To the north of the mountain you rode on honey-colored plains. Look up anywhere, any time, and you saw Escudilla.

To the east you rode over a confusion of wooded mesas. Each hollow seemed its own small world, soaked in sun, fragrant with juniper, and cozy with the chatter of pi on jays. But top out on a ridge and you at once became a speck in an immensity. On its edge hung Escudilla.

To the south lay the tangled canyons of Blue River, full of whitetails, wild turkeys, and wilder cattle. When you missed a saucy buck waving his goodbye over the skyline, and looked down your sights to wonder why, you looked at a far blue mountain: Escudilla.

To the west billowed the outliers of the Apache National Forest. We cruised timber there, converting the tall pines, forty by forty, into notebook figures representing hypothetical lumber piles. Panting up a canyon, the cruiser felt a curious incongruity between the remoteness of his notebook symbols and the immediacy of sweaty fingers, locust thorns, deer-fly bites, and scolding squirrels. But on the next ridge a cold wind, roaring across a

green sea of pines, blew his doubts away. On the far shore hung Escudilla.

The mountain bounded not only our work and our play, but even our attempts to get a good dinner. On winter evenings we often tried to ambush a mallard on the river flats. The wary flocks circled the rosy west, the steel-blue north, and then disappeared into the inky black of Escudilla. If they reappeared on set wings, we had a fat drake for the Dutch oven. If they failed to reappear, it was bacon and beans again.

There was, in fact, only one place from which you did not see Escudilla on the skyline: that was the top of Escudilla itself. Up there you could not see the mountain, but you could feel it. The reason was the big bear.

Old Bigfoot was a robber-baron, and Escudilla was his castle. Each spring, when the warm winds had softened the shadows on the snow, the old grizzly crawled out of his hibernation den in the rock slides and, descending the mountain, bashed in the head of a cow. Eating his fill, he climbed back to his crags, and there summered peaceably on marmots, conies, berries, and roots.

I once saw one of his kills. The cow's skull and neck were pulp, as if she had collided head-on with a fast freight.

No one ever saw the old bear, but in the muddy springs about the base of the cliffs you saw his incredible tracks. Seeing them made the most hardbitten cowboys aware of bear. Wherever they rode they saw the mountain, and when they saw the mountain they thought of bear. Campfire conversation ran to beef, bailes, and bear. Bigfoot claimed for his own only a cow a year, and a few square miles of useless rocks, but his personality pervaded the county.

Those were the days when progress first came to the cow country. Progress had various emissaries.

One was the first transcontinental automobilist. The cowboys understood this breaker of roads; he talked the same breezy bravado as any breaker of bronchos.

They did not understand, but they listened to and looked at, the pretty lady in black velvet who came to enlighten them, in a Boston accent, about woman suffrage.

They marveled, too, at the telephone engineer who strung wires on the junipers and brought instantaneous messages from town. An old man asked whether the wire could bring him a side of bacon.

One spring, progress sent still another emissary, a government trapper, a sort of St. George in overalls, seeking dragons to slay at government expense. Were there, he asked, any destructive animals in need of slaying? Yes, there was the big bear.

The trapper packed his mule and headed for Escudilla.

In a month he was back, his mule staggering under a heavy hide. There was only one

barn in town big enough to dry it on. He had tried traps, poison, and all his usual wiles to no avail. Then he had erected a set-gun in a defile through which only the bear could pass, and waited. The last grizzly walked into the string and shot himself.

It was June. The pelt was foul, patchy, and worthless. It seemed to us rather an insult to deny the last grizzly the chance to leave a good pelt as a memorial to his race. All he left was a skull in the National Museum, and a quarrel among scientists over the Latin name of theskull.

It was only after we pondered on these things that we began to wonder who wrote the rules for progress.

Since the beginning, time had gnawed at the basaltic hulk of Escudilla, wasting, waiting, and building. Time built three things on the old mountain, a venerable aspect, a community of minor animals and plants, and a grizzly.

The government trapper who took the grizzly knew he had made Escudilla safe for cows. He did not know he had toppled the spire off an edifice a-building since the morning stars sang together.

The bureau chief who sent the trapper was a biologist versed in the architecture of evolution, but he did not know that spires might be as important as cows. He did not foresee that within two decades the cow country would become tourist country, and as such have greater need of bears than of beefsteaks.

The Congressmen who voted money to clear the ranges of bears were the sons of pioneers. They acclaimed the superior virtues of the frontiersman, but they strove with might and main to make an end of the frontier.

We forest officers, who acquiesced in the extinguishment of the bear, knew a local rancher who had plowed up a dagger engraved with the name of one one of Coronado's captains. We spoke harshly of the Spaniards who, in their zeal for gold and converts, had needlessly extinguished the native Indians. It did not occur to us that we, too, were the captains of an invasion too sure of its own righteousness.

Escudilla still hangs on the horizon, but when you see it you no longer think of bear. It's only a mountain now.

Chihuahua and Sonora

Guacamaja

The physics of beauty is one department of natural science still in the Dark Ages. Not even the manipulators of bent space have tried to solve its equations. Everybody knows, for

example, that the autumn landscape in the north woods is the land, plus a red maple, plus a ruffed grouse. In terms of conventional physics, the grouse represents only a millionth of either the mass or the energy of an acre. Yet subtract the grouse and the whole thing is dead. An enormous amount of some kind of motive power has been lost.

It is easy to say that the loss is all in our mind's eye, but is there any sober ecologist who will agree? He knows full well that there has been an ecological death, the significance of which is inexpressible in terms of contemporary science. A philosopher has called this imponderable essence the numenon of material things. It stands in contradistinction to phenomenon, which is ponderable and predictable, even to the tossings and turnings of the remotest star.

The grouse is the numenon of the north woods, the blue jay of the hickory groves, the whisky-jack of the muskegs, the pinonero of the juniper foothills. Ornithological texts do not record these facts. I suppose they are new to science, however obvious to the discerning scientist. Be that as it may, I here record the discovery of the numenon of the Sierra Madre: the Thick-billed Parrot.

He is a discovery only because so few have visited his haunts. Once there, only the deaf and blind could fail to perceive his role in the mountain life and landscape. Indeed you have hardly finished breakfast before the chattering flocks leave their roost on the rimrocks and perform a sort of morning drill in the high reaches of the dawn. Like squadrons of cranes they wheel and spiral, loudly debating with each other the question (which also puzzles you) whether this new day which creeps slowly over the canyons is bluer and golder than its predecessors, or less so. The vote being a draw, they repair by separate companies to the high mesas for their breakfast of pine seed on the half shell. They have not yet seen you.

But a little later, as you begin the steep ascent out of the canyon, some sharp-eyed parrot, perhaps a mile away, espies this strange creature puffing up the trail where only deer or lion, bear or turkey, is licensed to travel. Breakfast is forgotten. With a whoop and a shout the whole gang is a-wing and coming at you. As they circle overhead you wish fervently for a parrot dictionary. Are they demanding what-the-devil business have you in these parts? Or are they, like an avian chamber-of-commerce, merely making sure you appreciate the glories of their home town, its weather, its citizens, and its glorious future as compared with any and all other times and places whatsoever? It might be either or both. And there flashes through your mind the sad premonition of what will happen when the road is built, and this riotous reception committee first greets the tourist-with-a-gun.

It is soon clear that you are a dull inarticulate fellow, unable to respond by so much as a whistle to the standard amenities of the Sierra morn. And after all, there are more pine

cones in the woods than have yet been opened, so let's finish breakfast! This time they may settle upon some tree below the rimrock, giving you the chance to sneak out to the edge and look down. There for the first time you see color: velvet green uniforms with scarlet and yellow epaulets and black helmets, sweeping noisily from pine to pine, but always in formation and always in even numbers. Only once did I see a gang of five, or any other number not comprised of pairs.

I do not know whether the nesting pairs are as noisy as these roistering flocks that greeted me in September. I do know that in September, if there are parrots on the mountain, you will soon know it. As a proper ornithologist, I should doubtless try to describe the call. It superficially resembles that of the piñon jay, but the music of the piñoneros is as soft and nostalgic as the haze hanging in their native canyons, while that of the Guacamaja is louder and full of the salty enthusiasm of high comedy.

In spring, I am told, the pair hunts up a woodpecker hole in some tall dead pine and performs its racial duty in temporary isolation. But what woodpecker excavates a hole large enough? The Guacamaja (as the natives euphoniously call the parrot) is as big as a pigeon, and hardly to be squeezed into a flicker-loft. Does he, with his own powerful beak, perform the necessary enlargement? Or is he dependent on the holes of the imperial woodpecker, which is said to occur in these parts? To some future ornithological visitor I bequeath the pleasant task of discovering the answer.

The Green Lagoons

It is the part of wisdom never to revisit a wilderness, for the more golden the lily, the more certain that someone has gilded it. To return not only spoils a trip, but tarnishes a memory. It is only in the mind that shining adventure remains forever bright. For this reason, I have never gone back to the Delta of the Colorado since my brother and I explored it, by canoe, in 1922.

For all we could tell, the Delta had lain forgotten since Hernando de Alarcón landed there in 1540. When we camped on the estuary which is said to have harbored his ships, we had not for weeks seen a man or a cow, an axe-cut or a fence. Once we crossed an old wagon track, its maker unknown and its errand probably sinister. Once we found a tin can; it was pounced upon as a valuable utensil.

Dawn on the Delta was whistled in by Gambel quail, which roosted in the mesquites overhanging camp. When the sun peeped over the Sierra Madre, it slanted across a hundred miles of lovely desolation, a vast flat bowl of wilderness rimmed by jagged peaks. On the map the Delta was bisected by the river, but in fact the river was nowhere and everywhere, for he could not decide which of a hundred green lagoons offered the most pleasant and

least speedy path to the Gulf. So he traveled them all, and so did we. He divided and rejoined, he twisted and turned, he meandered in awesome jungles, he all but ran in circles, he dallied with lovely groves, he got lost and was glad of it, and so were we. For the last word in procrastination, go travel with a river reluctant to lose his freedom in the sea.

'He leadeth me by still waters' was to us only a phrase in a book until we had nosed our canoe through the green lagoons. If David had not written the psalm, we should have felt constrained to write our own. The still waters were of a deep emerald hue, colored by algae, I suppose, but no less green for all that. A verdant wall of mesquite and willow separated the channel from the thorny desert beyond. At each bend we saw egrets standing in the pools ahead, each white statue matched by its white reflection. Fleets of cormorants drove their black prows in quest of skittering mullets; avocets, willets, and yellowlegs dozed on-legged on the bars; mallards, widgeons, and teal sprang skyward in alarm. As the birds took the air, they accumulated in a small cloud ahead, there to settle, or to break back to our rear. When a troop of egrets settled on a far green willow, they looked like a premature snowstorm.

All this wealth of fowl and fish was not for our delectation alone. Often we came upon a bobcat, flattened to some half-immersed driftwood log, paw poised for mullet. Families of raccoons waded the shallows, munching water beetles. Coyotes watched us from inland knolls, waiting to resume their breakfast of mesquite beans, varied, I suppose, by an occasional crippled shore bird, duck, or quail. At every shallow ford were tracks of burro deer. We always examined these deer trails, hoping to find signs of the despot of the Delta, the great jaguar, el tigre.

We saw neither hide nor hair of him, but his personality pervaded the wilderness; no living beast forgot his potential presence, for the price of unwariness was death. No deer rounded a bush, or stopped to nibble pods under a mesquite tree, without a premonitory sniff for el tigre. No campfire died without talk of him. No dog curled up for the night, save at his master's feet; he needed no telling that the king of cats still ruled the night; that those massive paws could fell an ox, those jaws shear off bones like a guillotine.

By this time the Delta has probably been made safe for cows, and forever dull for adventuring hunters. Freedom from fear has arrived, but a glory has departed from the green lagoons.

When Kipling smelled the supper smokes of Amritsar, he should have elaborated, for no other poet has sung, or smelled, this green earth's firewoods. Most poets must have subsisted on anthracite.

On the Delta one burns only mesquite, the ultimate in fragrant fuels. Brittle with a hundred frosts and floods, baked by a thousand suns, the gnarled imperishable bones of these ancient trees lie ready-to-hand at every camp, ready to slant blue smoke across the

twilight, sing a song of teapots, bake a loaf, brown a kettle of quail, and warm the shins of man and beast. When you have ladled a shovelful of mesquite coals under the Dutch oven, take care not to sit down in that spot before bedtime, lest you rise with a yelp that scares the quail roosting overhead. Mesquite coals have seven lives.

We had cooked with white-oak coals in the corn belt, we had smudged our pots with pine in the north woods, we had browned venison ribs over Arizona juniper, but we had not seen perfection until we roasted a young goose with Delta mesquite.

Those geese deserved the best of brownings, for they had bested us for a week. Every morning we watched the cackling phalanx head inland from the Gulf, shortly to teturn, replete and silent. What rare provender in what green lagoon was the object of their quest? Again and again we moved camp gooseward, hoping to see them settle, to find their banquet board. One day at about 8 a.m. we saw the phalanx circle, break ranks, sideslip, and fall to earth like maple leaves. Flock after flock followed. At long last we had found their rendezvous.

Next morning at the same hour we lay in wait beside an ordinary-looking slough, its bars covered with yesterday's goosetracks. We were already hungry, for it had been a long tramp from camp. My brother was eating a cold roast quail. The quail was halfway to his mouth when a cackle from the sky froze us to immobility. That quail hung in midair while the flock circled at leisure, debated, hesitated, and finally came in. That quail fell in the sand when the guns spoke, and all the geese we could eat lay kicking on the bar.

More came, and settled. The dog lay trembling. We ate quail at leisure, peering through the blind, listening to the small-talk. Those geese were gobbling gravel. As one flock filled up and left, another arrived, eager for their delectable stones. Of all the millions of pebbles in the green lagoons, those on this particular bar suited them best. The difference, to a snow goose, was worth forty miles of flying. It was worth a long hike to us.

Most small game on the Delta was too abundant to hunt. At every camp we hung up, in a few minutes' shooting, enough quail for tomorrow's use. Good gastronomy demanded at least one frosty night on the stringer as the necessary interlude between roosting in a mesquite and roasting over mesquite.

All game was of incredible fatness. Every deer laid down so much tallow that the dimple along his backbone would have held a small pail of water, had he allowed us to pour it. He didn't.

The origin of all this opulence was not far to seek. Every mesquite and every tornillo was loaded with pods. The dried-up mud flats bore an annual grass, the grain-like seeds of which could be scooped up by the cupful. There were great patches of a legume resembling coffeeweed; if you walked through these, your pockets filled up with shelled beans.

I remember one patch of wild melons, or calabasillas, covering several acres of mudflat. The deer and coons had opened the frozen fruits, exposing the seeds. Doves and quail fluttered over this banquet like fruit-flies over a ripe banana.

We could not, or at least did not, eat what the quail and deer did, but we shared their evident delight in this milk-and-honey wilderness. Their festival mood became our mood; we all reveled in a common abundance and in each other's well-being. I cannot recall feeling, in settled country, a like sensitivity to the mood of the land.

Camp-keeping in the Delta was not all beer and skittles. The problem was water. The lagoons were saline; the river, where we could find it, was too muddy to drink. At each new camp we dug a new well. Most wells, however, yielded only brine from the Gulf. We learned, the hard way, where to dig for sweet water. When in doubt about a new well, we lowered the dog by his hind legs. If he drank freely, it was the signal for us to beach the canoe, kindle the fire, and pitch the tent. Then we sat at peace with the world while the quail sizzled in the Dutch oven, and the sun sank in glory behind the San Pedro Mrtir. Later, dishes washed, we rehearsed the day, and listened to the noises of the night.

Never did we plan the morrow, for we had learned that in the wilderness some new and irresistible distrac-tion is sure to turn up each day before breakfast. Like the river, we were free to wander.

To travel by plan in the Delta is no light matter; we were reminded of this whenever we climbed a cottonwood for a wider view. The view was so wide as to discourage prolonged scrutiny, especially toward the northwest, where a white streak at the foot of the Sierra hung in perpetual mirage. This was the great salt desert, on which , in 1829, Alexander Pattie died of thirst, exhaustion, and mosquitoes. Pattie had a plan: to cross the Delta to California.

Once we had a plan to portage from one green lagoon to a greener one. We knew it was there by the waterfowl hovering over it. The distance was 300 yards through a jungle of cachinilla, a tall spear-like shrub which grows in thickets of incredible density. The floods had bent down the spears, which opposed our passage in the manner of a Macedonian phalanx. We discreetly withdrew, persuaded that our lagoon was prettier anyhow.

Getting caught in a maze of cachinilla phalanxes was a real danger that no one had mentioned, whereas the danger we had been warned against failed to materialize. When we launched our canoe above the border, there were dire predictions of sudden death. Far huskier craft, we were told, had been overwhelmed by the tidal bore, a wall of water that rages up the river from the Gulf with certain incoming tides. We talked about the bore, we spun elaborate schemes to circumvent it, we even saw it in our dreams, with dolphins riding its crest and an aerial escort of screaming gulls. When we reached the mouth of the river, we hung our canoe in a tree and waited two days, but the bore let us down. It did not come.

The Delta having no place names, we had to devise our own as we went. One lagoon we called the Rillito, and it is here that we saw pearls in the sky. We were lying flat on our backs, soaking up November sun, staring idly at a soaring buzzard overhead. Far beyond him the sky suddenly exhibited a rotating circle of white spots, alternately visible and invisible. A faint bugle note soon told us they were cranes, inspecting their Delta and finding it good. At the time my ornithology was homemade, and I was pleased to think them whooping cranes because they were so white. Doubtless they were sandhill cranes, but it doesn't matter. What matters is that we were sharing our wilderness with the wildest of living fowl. We and they had found a common home in the remote fastnesses of space and time; we were both back in the Pleistocene. Had we been able to, we would have bugled back their greeting. Now, from the far reaches of the years, I see them wheeling still.

All this was far away and long ago. I am told the green lagoons now raise cantaloupes. If so, they should not lack flavor.

Man always kills the thing he loves, and so we the pioneers have killed our wilderness. Some say we had to. Be that as it may, I am glad I shall never be young without wild country to be young in. Of what avail are forty freedoms without a blank spot on the map?

Song of the Gavilan

The song of a river ordinarily means the tune that waters play on rock, root, and rapid.

The Rio Gavilan has such a song. It is a pleasant music, bespeaking dancing riffles and fat rainbows laired under mossy roots of sycamore, oak, and pine. It is also useful, for the tinkle of waters so fills the narrow canyon that deer and turkey, coming down out of the hills to drink, hear no footfall of man or horse. Look sharp as you round the next bend, for it may yield you a shot, and thus save a heart-breaking climb in the high mesas.

This song of the waters is audible to every ear, but there is other music in these hills, by no means audible to all. To hear even a few notes of it you must first live here for a long time, and you must know the speech of hills and rivers. Then on a still night, when the campfire is low and the Pleiades have climbed over rimrocks, sit quietly and listen for a wolf to howl, and think hard of everything you have seen and tried to understand. Then you may hear it—a vast pulsing harmony—its score inscribed on a thousand hills, its notes the lives and deaths of plants and animals, its rhythms spanning the seconds and the centuries.

The life of every river sings its own song, but in most the song is long since marred by the discords of misuse. Overgrazing first mars the plants and then the soil. Rifle, trap, and poison next deplete the larger birds and mammals; then comes a park or forest with roads and tourists. Parks are made to bring the music to the many, but by the time many are attuned to hear it there is little left but noise.

There once were men capable of inhabiting a river without disrupting the harmony of its life. They must have lived in thousands on the Gavilan, for their works are everywhere. Ascend any draw debouching on any canyon and you find yourself climbing little rock terraces or check dams, the crest of one level with the base of the next. Behind each dam is a little plot of soil that was once a field or garden, subirrigated by the showers which fell on the steep adjoining slopes. On the crest of the ridge you may find the stone foundations of a watch tower; here the hillside farmer probably stood guard over his polkadot acrelets. Household water he must have carried from the river. Of domestic animals he evidently had none. What crops did he raise? How long ago? The only fragment of an answer lies in the 300-year-old pines, oaks, or junipers that now find rootage in his little fields. Evidently it was longer ago than the age of the oldest trees.

The deer love to lie on these little terraces. They afford a level bed, free of rocks, upholstered with oak leaves, and curtained by shrubs. One bound over the dam and the deer is out of sight of an intruder.

One day, by aid of a roaring wind, I crept down upon a buck bedded on a dam. He lay in the shade of a great oak whose roots grasped the ancient masonary. His horns and ears were silhouetted against the golden grama beyond, in which grew the green rosette of a mescal. The whole scene had the balance of a well-laid centerpiece. I overshot, my arrow splintering on the rocks the old Indian had laid. As the buck bounded down the mountain with a goodbye wave of his snowy flag, I realized that he and I were actors in an allegory. Dust to dust, stone age to stone age, but always the eternal chase! It was appropriate that I missed, for when a great oak grows in what is now my garden, I hope there will be bucks to bed in its fallen leaves, and hunters to stalk, and miss, and wonder who built the garden wall.

Some day my buck will get a .30-.30 in his glossy ribs. A clumsy steer will appropriate his bed under the oak, and will munch the golden grama until it is replaced by weeds. Then a freshet will tear out the old dam, and pile its rocks against a tourist road along the river below. Trucks will churn the dust of the old trail on which I saw wolf tracks yesterday.

To the superficial eye the Gavilan is hard and stony land, full of cruel slopes and cliffs, its trees too gnarled for post of sawlog, its ranges too steep for pasturage. But the old terrace-builders were not deceived; they knew it by experience to be a land of milk and honey. These twisted oaks and junipers bear each year a crop of mast to be had by wildlings for the pawing. The deer, turkeys, and javelinas spend their days, like steers in a cornfield, converting this mast into succulent meat. These golden grasses conceal, under their waving plumes, a subterra-nean garden of bulbs and tubers, including wild potatoes. Open the crop of a fat little Mearns' quail and you find an herbarium of subsurface foods scratched from the rocky ground you thought barren. These foods are the motive power which plants

pump through that great organ called the fauna.

Every region has a human food symbolic of its fatness. The hills of the Gavilan find their gastronomic epitome in this wise: Kill a mast-fed buck, not earlier than November, not later than January. Hang him in a live-oak tree for seven frosts and seven suns. Then cut out the half-frozen 'straps' from their bed of tallow under the saddle, and slice them transversely into steaks. Rub each steak with salt, pepper, and flour. Throw into a Dutch oven containing deep smoking-hot bear fat and standing on live-oak coals. Fish out the steaks at the first sign of browning. Throw a little flour into the fat, then ice-cold water, then milk. Lay a steak on the summit of a steaming sour-dough biscuit and drown both in gravy.

This structure is symbolic. The buck lies on his mountain, and the golden gravy is the sunshine that floods his days, even unto the end.

Food is the continuum in the Song of the Gavilan. I mean, of course, not only your food, but food for the oak which feeds the buck who feeds the cougar who dies under an oak and goes back into acorns for his erstwhile prey. This is one of many food cycles starting form and returning to oaks, for the oak also feeds the jay who feeds the goshawk who named your river, the bear whose grease made your gravy, the quail who taught you a lesson in botany, and the turkey who daily gives you the slip. And the common end of all is to help the headwater trickles of the Favilan split one more grain of soil off the broad hulk of the Sierra Madre to make another oak.

There are men charged with the duty of examining the construction of the plants, animals, and soils which are the instruments of the great orchestra. These men are called professors. Each selects one instrument and spends his life taking it apart and describing its strings and sounding boards. This process of dismemberment is called research. The place for dismemberment is called a university.

A professor may pluck the strings of his own instrument, but never that of another, and if he listens for music he must never admit it to his fellows or to his students. For all are restrained by an ironbound taboo which decrees that the construction of instruments is the domain of science, while the detection of harmony is the domain of poets.

Professors serve science and science serves progress. It serves progress so well that many of the more intricate instruments are stepped upon and broken in the rush to spread progress to all backward lands. One by one the parts are thus stricken from the songs of songs. If the professor is able to classify each instrument before it is broken, he is well content.

Science contributes moral as well as material blessings to the world. Its great moral contribution is objectivity, or the scientific point of view. This means doubting everything except facts; it means hewing to the facts, let the chips fall where they may. One of the

facts hewn to by science is that every river needs more people, and all people need more inventions, and hence more science; the good life depends on the indefinite extension of this chain of logic. That the good life on any river may likewise depend on the perception of its music, and the preservation of some music to perceive, is a form of doubt not yet entertained by science.

Science has not yet arrived on the Gavilan, so the otter plays tag in its pools and riffles and chases the fat rainbows from under its mossy banks with never a thought for the flood that one day will scour the bank into the Pacific, or for the sportsman who will one day dispute his title to the trout. Like the scientist, he has no doubts about his own design for living. He assumes that for him the Gavilan will sing forever.

Oregon and Utah

Cheat Takes Over

Just as there is honor among thieves, so there is solidarity and co-operation among plant and animal pests. Where one pest is stopped by natural barriers, another arrives to breach the same wall by a new approach. In the end every region and every resource get their quota of uninvited ecological guests.

Thus the English sparrow, rendered innocuous by the shrinkage in horses, was succeeded by the starling, who thrives in the wake of tractors. The chestnut blight, which had no passport beyond the west boundary of chestnuts, is being followed by the Dutch elm disease, with every chance of spreading to the west boundary of elms. The white-pine blister rust, stopped in its westward march by the treeless plains, effected a new landing via the back door, and is now romping down the Rockies from Idaho toward California.

Ecological stowaways began to arrive with the earliest settlements. The Swedish botanist, Peter Kalm, found most of the European weeds established in New Jersey and New York as early as 1750. They spread as rapidly as the settler's plow could prepare a suitable seedbed.

Others arrived later, from the West, and found thousands of square miles of ready-made seedbed prepared by the trampling hoofs of range livestock. In such cases the spread was often so rapid as to escape recording; one simply woke up one fine spring to find the range dominated by a new weed. A notable instance was the invasion of the intermountain and northwestern foothills by downy chess or cheat grass (Bromus tectorum).

Lest you gain too optimistic an impression of this new ingredient of the melting pot, let me say that cheat is not a grass in the sense of forming a live sod. It is an annual weed of the grass family, like foxtail or crabgrass, dying each fall and reseeding that fall or the next

spring. In Europe its habitat is the decaying straw of thatched roofs. The Latin word for roof is tectum, hence the label 'Brome of the roofs.' A plant that can make a living on the roof of a house can also thrive on this rich but arid roof of the continent.

Today the honey-colored hills that flank the northwestern mountains derive their hue not from the rich and useful bunchgrass and wheatgrass which once covered them, but from the inferior cheat which has replaced these native grasses. The motorist who exclaims about the flowing contours that lead his eye upward to far summits is unaware of this substitution. It does not occur to him hat hills, too, cover ruined complexions with ecological face powder.

The cause of the substitution is overgrazing. When the too-great herds and flocks chewed and trampled the hide off the foothills, something had to cover the raw eroding earth. Cheat did.

Cheat grows in dense stands, and each stem bears a mass of prickly awns which render the mature plant inedible to stock. To appreciate the predicament of a cow trying to eat mature cheat, try walking through it in low shoes. All field workers in cheat country wear high boots. Nylons are here relegated to running boards and concrete sidewalks.

These prickly awns cover the autumn hills with a yellow blanket as inflammable as cotton-wool. It is impos-sible fully to protect cheat country from fire. As a consequence, the remnants of good browse plants, such as sagebrush and bitterbrush, are being burned back to higher altitudes, where they are less useful as winter forage. The lower fringes of pine timber, needed as winter cover for deer and birds, are likewise being singed back to higher levels.

To a summer tourist, the burning of a few bushes off the foothills may seem a minor loss. He is unaware that, in winter, snow excludes both livestock and game from the higher mountains. Livestock can be fed on valley ranches, but deer and elk must find food in the foothills or starve. The habitable wintering belt is narrow, and the further north one goes, the greater is the disparity between the area of habitable winter range and the area of summer range. Hence these scattering foothill clumps of bitterbrush, sage, and oak, now fast shrinking under the onslaught of cheat fires, are the key to wildlife survival in the whole region. Besides, these scattered bushes often harbor, under their mechanical protection, remnants of native perennial grasses. When the bushes are burned off, these grass remnants succumb to livestock. While the sportsmen and stockmen wrangle over who should move first in easing the burden on the winter range, cheat grass is leaving less and less winter range to wrangle about.

Cheat gives rise to many minor irritations, most of them less important, perhaps, than starving deer or cheat-sores in a cow's mouth, but still worth mentioning. Cheat invades old alfalfa fields and degrades the hay. It blockades newly hatched ducklings from making the vital trek from upland nest to lowland water. It invades the lower fringe

of lumber areas, where it chokes out seedling pines and threatens older reproduction with the danger of quick fire.

I experienced a minor irritation myself when I arrived at a 'port of entry' on the northern California border, where my car and baggage were searched by a quarantine officer. He explained politely that California welcomes tourists, but that she must make sure their baggage harbors no plant or animal pests. I asked him what pests. He recited a long list of prospective garden and orchard afflictions, but he did not mention the yellow blanket of cheat, which already extended from his feet to the far hills in every direction.

As is true of the carp, the starling, and the Russian thistle, the cheat-afflicted regions make a virtue of necessity and find the invader useful. Newly sprouted cheat is good forage while it lasts; like as not the lamb chop you ate for lunch was nurtured on cheat during the tender days of spring. Cheat reduces the erosion that would otherwise follow the overgrazing that admitted cheat. (This ecological ring-around-the-rosy merits long thought.)

I listened carefully for clues whether the West has accepted cheat as a necessary evil, to be lived with until kingdom come, or whether it regards cheat as a challenge to rectify its past errors in land-use. I found the hopeless attitude almost universal. There is, as yet, no sense of pride in the husbandry of wild plants and animals, no sense of shame in the proprietorship of a sick landscape. We tilt windmills in behalf of conservation in convention halls and editorial offices, but on the back forty we disclaim even owning a lance.

Manitoba

Clandeboye

Education, I fear, is learning to see one thing by going blind to another.

One thing most of us have gone blind to is the quality of marshes. I am reminded of this when, as a special favor, I take a visitor to Clandeboye, only to find that, to him, it is merely lonelier to look upon, and stickier to navigate, than other boggy places.

This is strange, for any pelican, duckhawk, godwit, or western grebe is aware that Clandeboye is a marsh apart. Why else do they seek it out in preference to other marshes? Why else do they resent my intrusion within its precincts not as mere trespass, but as some kind of cosmic impropriety?

I think the secret is this: Clandeboye is a marsh apart, not only in space, but in time. Only the uncritical consumers of hand-me-down history suppose that 1941 arrived simultaneously in all marshes. The birds know better. Let a squadron of southbound pelicans but feel a lift of prairie breeze over Clandeboye, and they sense at once that here is a landing in

the geological past, a refuge from that most relentless of aggressors, the future. With queer antediluvian grunts they set wing, descending in majestic spirals to the welcoming wastes of a bygone age.

Other refugees are already there, each accepting in his own fashion his respite from the march of time. Forster's terns, like troops of happy children, scream over the mud-flats as if the first cold melt from the retreating ice sheet were shivering the spines of their minnowy prey. A file of sandhill cranes bugles defiance of whatever it is that cranes distrust and fear. A flotilla of swans rides the bay in quiet dignity, bemoaning the evanescence of swanly things. From the tip of a storm-wracked cottonwood, where the marsh discharges into the big lake, a peregrine stoops playfully at passing fowl. He is gorged with duck meat, but it amuses him to terrorize the squealing teals. This, too, was his after-dinner sport in the days when Lake Agassiz covered the prairies.

It is easy to classify the attitudes of these wildlings, for each wears his heart on his sleeve. But there is one refugee in Clandeboye whose mind I cannot read, for he tolerates no truck with human intruders. Let other birds spill easy confidence to upstarts in overalls, but not the western grebe! Stalk carefully as I will to the bordering reeds, all I get to see is a flash of silver as he sinks, soundless, into the bay. And then, from behind the reedy curtain of the far shore, he tinkles a little bell, warning all his kind of something. Of what?

I've never been able to guess, for there is some barrier between this bird and all mankind. One of my guests dismissed the grebe by checking off his name in the bird list, and jotting down a syllabic paraphrase of the tinkling bell: 'crick-crick,' or some such inanity. The man failed to sense that here was something more than a bird-call, that here was a secret message, calling not for rendition in counterfeit syllables, but for translation and understanding. Alas, I was, and still am, as helpless to translate it or to understand it as he.

As the spring advances, the bell grows persistent; at dawn and at dusk it tinkles from every open water. I infer that the young grebes are now launched in their watery career, and are receiving parental instruction in the grebe philosophy. But to see this schoolroom scene, that is not so easy.

One day I buried myself, prone, in the muck of a muskrat house. While my clothes absorbed local color, my eyes absorbed the lore of the marsh. A hen redhead cruised by with her convoy of ducklings, pinkbilled fluffs of greenish-golden down. A Virginia rail nearly brushed my nose. The shadow of a pelican sailed over a pool in which a yellow-leg alighted with warbling whistle; it occurred to me that whereas I write a poem by dint of mighty cerebration, the yellow-leg walks a better one just by lifting his foot.

A mink slithered up the shore behind me, nose in air, trailing. Marsh wrens made trip after trip to a knot in the bulrushes, whence came the clamor of nestlings. I was starting to

doze in the sun when there emerged from the open pool a wild red eye, glaring from the head of a bird. Finding all quiet, the silver body emerged: big as a goose, with the lines of a slim torpedo. Before I was aware of when or whence, a second grebe was there, and on her broad back rode two pearly-silver young, neatly enclosed in a corral of humped-up wings. All rounded a bend before I recovered my breath. And now I heard the bell, clear and derisive, behind the curtain of the reeds.

A sense of history should be the most precious gift of science and of the arts, but I suspect that the grebe, who has neither, knows more history than we do. His dim primordial brain knows nothing of who won the Battle of Hastings, but it seems to sense who won the battle of time. If the race of men were as old as the race of grebes, we might better grasp the import of his call. Think what traditions, prides, disdains, and wisdoms even a few self-conscious generations bring to us! What pride of continuity, then, impels this bird, who was a grebe eons before there was a man.

Be that as it may, the call of the grebe is, by some peculiar authority, the sound that dominates and unifies the marsh-land chorus. Perhaps, by some immemorial authority, he wields the baton for the whole biota. Who beats the measure for the lakeshore rollers as they build reef after reef for marsh after marsh, as age after age the waters recede to lower levels? Who holds sago and bulrush to their task of sucking sun and air, lest in winter the muskrats starve, and the canes engulf the marsh in lifeless jungle? Who counsels patience to brooding ducks by day, and incites bloodthirst in marauding minks by night? Who exhorts precision for the heron's spear, and speed for the falcon's fist? We assume, because all these creatures perform their diverse tasks without admonition audible to us, that they receive none, that their skills are inborn and their industry automatic, that weariness is unknown to the wild. Perhaps weariness is unknown only to grebes; perhaps it is the grebe who reminds them that if all are to survive, each must ceaselessly feed and fight, breed and die.

The marshlands that once sprawled over the prairie from the Illinois to the Athabasca are shrinking northward. Man cannot live by marsh alone, therefore he must needs live marshless. Progress cannot abide that farmland and marshland, wild and tame, exist in mutual toleration and harmony.

So with dredge and dyke, tile and torch, we sucked the cornbelt dry, and now the wheatbelt. Blue lake becomes green bog, green bog becomes caked mud, caked mud becomes a wheatfield.

Some day my marsh, dyked and pumped, will lie forgotten under the wheat, just as today and yesterday will lie forgotten under the years. Before the last mud-minnow makes his last wiggle in the last pool, the terns will scream goodbye to Clandeboye, the swans will circle skyward in snowy dignity, and the cranes will blow their trumpets in farewell.

Part III
A Taste for Country

Country

There is much confusion between land and country. Land is the place where corn, gullies, and mortgages grow. Country is the personality of land, the collective harmony of its soil, life, and weather. Country knows no mortgages, no alphabetical agencies, no tobacco road; it is calmly aloof to these petty exigencies of its alleged owners. That the previous occupant of my farm was a bootlegger mattered not one whit to its grouse; they sailed as proudly over the thickets as if they were guests of a king.

Poor land may be rich country, and vice versa. Only economists mistake physical opulence for riches. Country may be rich despite a conspicuous poverty of physical endowment, and its quality may not be apparent at first glance, nor at all times.

I know, for example, a certain lakeshore, a cool austerity of pines and wave-washed sands. All day you see it only as something for the surf to pound, a dark ribbon that stretches farther than you can paddle, a monotony to mark the miles by. But toward sunset some vagrant breeze may waft a gull across a headland, behind which a sudden roistering of loons reveals the presence of a hidden bay. You are seized with an impulse to land, to set foot on bearberry carpets, to pluck a balsam bed, to pilfer beach plums or blueberries, or perhaps to poach a partridge from out those bosky quietudes that lie behind the dunes. A bay? Why not also a trout stream? Incisively the paddles clip little soughing swirls athwart the gunwale, the bow swings sharp shoreward and cleaves the greening depths for camp.

Later, a supper-smoke hangs lazily upon the bay; a fire flickers under drooping boughs.

It is a lean poor land, but rich country.

Some woods, perennially lush, are notably lacking in charm. Tall clean-boled oaks and tulip poplars may be good to look at, from the road, but once inside one may find a coarseness of minor vegetation, a turbidity of waters, and a paucity of wildlife. I cannot explain why a red rivulet is not a brook. Neither can I, by logical deduction, prove that a thicket without the potential roar of a quail covey is only a thorny place. Yet every outdoorsman knows that this is true. That wildlife is merely something to shoot at or to look at is the grossest of fallacies. It often represents the difference between rich country and mere land.

There are woods that are plain to look at, but not to look into. Nothing is plainer than a cornbelt woodlot; yet, if it be August, a crushed pennyroyal, or an over-ripe mayapple, tells you here is a place. October sun on a hickory nut is irrefutable evidence of good county; one senses not only hickory but a whole chain of further sequences: perhaps of oak coals in the dusk, a young squirrel browning, and a distant barred owl hilarious over his own joke.

The taste for country displays the same diversity in aesthetic competence among individuals as the taste for opera, or oils. There are those who are willing to be herded in droves through 'scenic' places; who find mountains grand if they be proper mountains with waterfalls, cliffs, and lakes. To such the Kansas plains are tedious. They see the endless corn, but not the heave and the grunt of ox teams breaking the prairie. History, for them, grows on campuses. They look at the low horizon, but they cannot see it, as de Vaca did, under the bellies of the buffalo.

In country, as in people, a plain exterior often conceals hidden riches, to perceive which requires much living in and with. Nothing is more monotonous than the juniper foothills, until some veteran of a thousand summers, laden blue with berries, explodes in a blue burst of chattering jays. The drab sogginess of a March cornfield, saluted by one honker from the sky, is drab no more.

A Man's Leisure Time

The text of this sermon is taken from the gospel according to Ariosto. I do not know the chapter and verse, but this is what he says: 'How miserable are the idle hours of the ignorant man!'

There are not many texts that I am able to accept as gospel truths, but this is one of them. I am willing to rise up and declare my belief that this text is literally true; true forward, true backward, true even before breakfast. The man who cannot enjoy his leisure

is ignorant, though his degrees exhaust the alphabet, and the man who does enjoy his leisure is to some extent educated, though he has never seen the inside of a school.

I cannot easily imagine a greater fallacy than for one who has several hobbies to speak on the subject to those who may have none. For this implies prescription of avocation by one person for another, which is the antithesis of whatever virtue may inhere in having any at all. You do not annex a hobby, the hobby annexes you. To prescribe a hobby would be dangerously akin to prescribing a wife—with about the same probability of a happy outcome.

Let it be understood, then, that this is merely an exchange of reflections among those already obsessed—for better or for worse—with the need of doing something queer. Let others listen if they will, and profit by our behavior if they can.

What is a hobby anyway? Where is the line of demarcation between hobbies and ordinary normal pursuits? I have been unable to answer this question to my own satisfaction. At first blush I am tempted to conclude that a satisfactory hobby must be in large degree useless, inefficient, laborious, or irrelevant. Certainly many of our most satisfying avocations today consist of making something by hand which machines can usually make more quickly and cheaply, and sometimes better. Nevertheless I must in fairness admit that in a different age the mere fashioning of a machine might have been an excellent hobby. Galileo, I fancy, derived a real and personal satisfaction when he set the ecclesiastical world on its ear by embodying in a new catapult some natural law that St. Peter had inadvertently omitted to catalogue. Today the invention of a new machine, however noteworthy to industry, would, as a hobby, be trite stuff. Perhaps we have here the real inwardness of our question: A hobby is a defiance of the contemporary. It is an assertion of those permanent values which the momentary eddies of social evolution have contravened or overlooked. If this is true, then we may also say that every hobbyist is inherently a radical, and that his tribe is inherently a minority.

This, however, is serious; becoming serous is a grievous fault in hobbyists. It is an axiom that no hobby should either seek or need rational justification. To wish to do it is reason enough. To find reasons why it is useful or beneficial converts it at once from an avocation into an industry—lowers it at once to the ignominious category of an 'exercise' undertaken for health, power, or profit. Lifting dumbbells is not a hobby. It is a confession of subservience, not an assertion of liberty.

When I was a boy, there was an old German merchant who lived in a little cottage in our town. On Sundays he used to go out and knock chips off the limestone ledges along the Mississippi, and he had a great tonnage of these chips, all labeled and catalogued. The chips contained little fossil stems of some defunct water creatures called crinoids. The townspeople regarded this gentle old fellow as just a little bit abnormal, but harmless. One

day the newspaper reported the arrival of certain titled strangers. It was whispered that these visitors were great scientists. Some of them were from foreign lands, and some among the world's leading paleontologists. They came to visit the harmless old man and to hear his pronouncements on crinoids, and they accepted these pronouncements as law. When the old German died, the town awoke to the fact that he was a world authority on his subject, a creator of knowledge, a maker of scientific history. He was a great man—a man beside whom the local captains of industry were mere bushwhackers. His collection went to a national museum, and his name is known in all the nations of the earth.

I knew a bank president who adventured in roses. Roses made him a happy man and a better bank president. I know a wheel manufacturer who adventures in tomatoes. He knows all about them, and, whether as a result or as a cause, he also knows all about wheels. I know a taxi driver who romances in sweet corn. Get him wound up once and you will be surprised how much he knows, and hardly less at how much there is to be known.

The most glamorous hobby I know of today is the revival of falconry. It has a few addicts in America, and perhaps a dozen in England—a minority indeed. For two and a half cents one can buy and shoot a cartridge that will kill the heron whose capture by hawking requires months or years of laborious training of both the hawk and the hawker. The cartridge, as a lethal agent, is a perfect product of industrial chemistry. One can write a formula for its lethal reaction. The hawk, as a lethal agent, is the perfect flower of that still utterly mysterious alchemy—evolution. No living man can, or possibly ever will, understand the instinct of predation that we share with our raptorial servant. No man-made machine can, or ever will, synthesize that perfect co-ordination of eye, muscle, and pinion as he stoops to his kill. The heron, if bagged, is inedible and hence useless (although the old falconers seem to have eaten him, just as a Boy Scout smokes and eats a flea-bitten summer cottontail that has fallen victim to his sling, club, or bow). Moreover the hawk, at the slightest error in technique of handling, may either 'go tame' like Homo sapiens or fly away into the blue. All in all, falconry is the perfect hobby.

To make and shoot the longbow is another. There is a subversive belief among laymen that in the hands of an expert the bow is an efficient weapon. Each fall, less than a hundred Wisconsin experts register to hunt deer with the broadheaded arrow. One out of the hundred may get a buck, and he is surprised. One out of five riflemen gets his buck. As an archer, therefore, and on the basis of our record, I indignantly deny the allegation of efficiency. I admit only this: that making archery tackle is an effective alibi for being late at the office, or failing to carry out the ashcan on Thursdays.

One cannot make a gun—at least I can't. But I can make a bow, and some of them will shoot. And this reminds me that perhaps our definition ought to be amended. A good

hobby, in these times, is one that entails either making something or making the tools to make it with, and then using it to accomplish some needless thing. When we have passed out of the present age, a good hobby will be the reverse of all these. I come again to the defiance of the contemporary.

A good hobby must also be a gamble. When I look at a rough, heavy, lumpy, splintery stave of bois d'arc, and envision the perfect gleaming weapon that will one day emerge from its graceless innards, and when I picture that bow, drawn in a perfect arc, ready—in a split second—to cleave the sky with its shining javelin, I must envision also the probability that it may—in a split second—burst into impotent splinters, while I face another laborious month of evenings at the bench. The possible debacle is, in short, an essential element in all hobbies, and stands in bold contradistinction to the humdrum certainty that the endless belt will eventuate in a Ford.

A good hobby may be a solitary revolt against the common-place, or it may be the joint conspiracy of a congenial group. That group may, on occasion, be the family. In either event it is a rebellion, and if a hopeless one, all the better. I cannot imagine a worse jumble than to have the whole body politic suddenly 'adopt' all the foolish ideas that smolder in happy discontent beneath the conventional surface of society. There is no such danger. Nonconformity is the highest evolutionary attainment of social animals, and will grow no faster than other new functions. Science is just beginning to discover what incredible regimentation prevails among the 'free' savages and the freer mammals and birds. A hobby is perhaps creation's first denial of the 'peck-order' that burdens the gregarious universe, and of which the majority of mankind is still a part.

沙郡年记

The Round River

One of the marvels of early Wisconsin was the Round River, a river that flowed into itself, and thus sped around and around in a never-ending circuit. Paul Bunyan discovered it, and the Bunyan saga tells how he floated many a log down its restless waters.

No one has suspected Paul of speaking in parables, yet in this instance he did. Wisconsin not only had a round river, Wisconsin is one. The current is the stream of energy which flows out of the soil into plants, thence into animals, thence back into the soil in a never ending circuit of life. 'Dust unto dust' is a desiccated version of the Round River concept.

We of the genus Homo ride the logs that float down the Round River, and by a little judicious 'burling' we have learned to guide their direction and speed. This feat entitles us

to the specific appellation sapiens. The technique of burling is called economics, the remembering of old routes is called history, the selection of new ones is called statesmanship, the conversation about oncoming riffles and rapids is called politics. Some of the crew aspire to burl not only their own logs, but the whole flotilla as well. This collective bargaining with nature is called national planning.

In our educational system, the biotic continuum is seldom pictured to us as a stream. From our tenderest years we are fed with facts about the soils, floras, and faunas that comprise the channel of Round River (biology), about their origins in time (geology and evolution), about the technique of exploiting them (agriculture and engineering). But the concept of a current with drouths and freshets, backwaters and bars, is left to inference. To learn the hydrology of the biotic stream we must think at right angles to evolution and examine the collective behavior of biotic materials. This calls for a reversal of specialization; instead of learning more and more about less and less, we must learn more and more about the whole biotic landscape.

Ecology is a science that attempts this feat of thinking in a plane perpendicular to Darwin. Ecology is an infant just learning to talk, and, like other infants, is engrossed with its own coinage of big words. Its working days lie in the future. Ecology is destined to become the lore of Round River, a belated attempt to convert our collective knowledge of biotic materials into a collective wisdom of biotic navigation. This, in the last analysis, is conservation.

Conservation is a state of harmony between men and land. By land is meant all of the things on, over, or in the earth. Harmony with land is like harmony with a friend; you cannot cherish his right hand and chop off his left. That is to say, you cannot love game and hate predators; you cannot conserve the waters and waste the ranges; you cannot build the forest and mine the farm. The land is one organism. Its parts, like our own parts, compete with each other and co-operate with each other. The competitions are as much a part of the inner workings as the co-operations. You can regulate them——cautiously——but not abolish them.

The outstanding scientific discovery of the twentieth century is not television, or radio, but rather the complexity of the land organism. Only those who know the most about it can appreciate how little is known about it. The last word in ignorance is the man who says of an animal or plant: 'What good is it?' if the land mechanism as a whole is good, then every part is good, whether we understand it or not. If the biota, in the course of aeons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering.

Have we learned this first principle of conservation: to preserve all the parts of the land mechanism? No, because even the scientist does not yet recognize all of them.

In Germany there is a mountain called the Spessart. Its south slope bears the most magnificent oaks in the world. American cabinetmakers, when they want the last word in quality, use Spessart oak. The north slope, which should be the better, bears an indifferent stand of Scotch pine. Why? Both slopes are part of the same state forest; both have been managed with equally scrupulous care for two centuries. Why the difference?

Kick up the litter under the oak and you will see that the leaves rot almost as fast as they fall. Under the pines, though, the needles pile up as a thick duff; decay is much slower. Why? Because in the Middle Ages the south slope was preserved as a deer forest by a hunting bishop; the north slope was pastured, plowed, and cut by settlers, just as we do with our woodlots in Wisconsin and Iowa today. Only after this period of abuse was the north slope replanted to pines. During this period of abuse something happened to the microscopic flora and fauna of the soil. The number of species was greatly reduced, i.e., the digestive apparatus of the soil lost some of its parts. Two centuries of conservation have not sufficed to restore these losses. It required the modern microscope, and a century of research in soil science, to discover the existence of these 'small cogs and wheels' which determine harmony or disharmony between men and land in the Spessart.

For the biotic community to survive, its internal processes must balance, else its member-species would disappear. That particular communities do survive for long periods is well known: Wisconsin, for example, in 1840 had substantially the same soil, fauna, and flora as at the end of the ice age, i.e. 12,000 years ago. We know this because the bones of its animals and the pollens of its plants are preserved in the peat bogs. The successive strata of peats, with their differing abundance of pollens, even record the weather; thus around 3000 B.C. an abundance of ragweed pollen indicates either a series of drouths, or a great stamping of buffalo, or severe fires on the prairie. These recurring exigencies did not prevent the survival of the 350 kinds of birds, 90 mammals, 150 fishes, 70 reptiles, or the thousands of insects and plants. That all these should survive as an internally balanced community for so many centuries shows an astonishing stability in the original biota. Science cannot explain the mechanisms of stability, but even a layman can see two of its effects: (1) Fertility, when extracted from rocks, circulated through such elaborate food chains that it accumulated as fast as or faster than it washed away. (2) This geological accumulation of soil fertility parallelled the diversification of flora and fauna; stability and diversity were apparently interdependent.

American conservation is, I fear, still concerned for the most part with show pieces. We have not yet learned to think in terms of small cogs and wheels. Look at our own back yard: at the prairies of Iowa and southern Wisconsin. What is the most valuable part of the prairie? The fat black soil, the chernozem. Who built the chernozem? The black prairie was built by the prairie plants, a hundred distinctive species of grasses, herbs, and shrubs; by the

prairie fungi, insects, and bacteria; by the prairie mammals and birds, all interlocked in one humming community of co-operations and competitions, one biota. This biota, through ten thousand years of living and dying, burning and growing, preying and fleeing, freezing and thawing, built that dark and bloody ground we call prairie.

Our grandfathers did not, could not, know the origin of their prairie empire. They killed off the prairie fauna and they drove the flora to a last refuge on railroad embankments and roadsides. To our engineers this flora is merely weeds and brush; they ply it with grader and mower. Through processes of plant succession predictable by any botanist, the prairie garden becomes a refuge for quack grass. After the garden is gone, the highway department employs landscapers to dot the quack with elms, and with artistic clumps of Scotch pine, Japanese barberry, and Spiraea. Conservation Committees, en route to some important convention, whiz by and applaud this zeal for roadside beauty.

Some day we may need this prairie flora not only to look at but to rebuild the wasting soil of prairie farms. Many species may then be missing. We have our hearts in the right place, but we do not yet recognize the small cogs and wheels.

In our attempts to save the bigger cogs and wheels, we are still pretty naïve. A little repentance just before a species goes over the brink is enough to make us feel virtuous. When the species is gone we have a good cry and repeat the performance.

The recent extermination of the grizzly from most of the western stock-raising states is a case in point. Yes, we still have grizzlies in the Yellowstone. But the species is ridden by imported parasites; the rifles wait on every refuge boundary; new dude ranches and new roads constantly shrink the remaining range; every year sees fewer grizzlies on fewer ranges in fewer states. We console ourselves with the comfortable fallacy that a single museum-piece will do, ignoring the clear dictum of history that a species must be saved in many places if it is to be saved at all.

We need knowledge—public awareness—of the small cogs and wheels, but sometimes I think there is something we need even more. It is the thing that Forest and Stream, on its editorial masthead, once called 'a refined taste in natural objects.' Have we made any headway in developing 'a refined taste in natural objects'?

In the northern parts of the lake states we have a few wolves left. Each state offers a bounty on wolves. In addition, it may invoke the expert services of the U.S. Fish and Wildlife Service in wolf-control. Yet both this agency and the several conservation commissions complain of an increasing number of localities where there are too many deer for the available feed. Foresters complain of periodic damage from too many rabbits. Why, then, continue the public policy of wolf-extermination? We debate such questions in terms of economics and biology. The mammalogists assert the wolf is the natural check on too many deer. The

sportsmen reply they will take care of excess deer. Another decade of argument and there will be no wolves to argue about. One conservation inkpot cancels another.

In the lake states we are proud of our forest nurseries, and of the progress we are making in replanting what was once the north woods. But look in these nurseries and you will find no white cedar, no tamarack. Why no cedar? It grows too slowly, the deer eat it, the alders choke it. The prospect of a cedarless north woods does not depress our foresters; cedar has, in effect, been purged on grounds of economic inefficiency. For the same reason beech has been purged from the future forests of the Southeast. To these voluntary expungements of species from our future flora, we must add the involuntary ones arising from the importation of diseases: chestnut, persimmon, white pine. Is it sound economics to regard any plant as a separate entity, to proscribe or encourage it on the grounds of its individual performance? What will be the effect on animal life, on the soil, and on the health of the forest as an organism? 'A refined taste in natural objects' perceives that the economic issue is a separate consideration.

We who are the heirs and assigns of Paul Bunyan have not found out either what we are doing to the river or what the river is doing to us. We burl our logs of state with more energy than skill.

We have radically modified the biotic stream; we had to. Food chains now begin with corn and alfalfa instead of oaks and bluestem, flow through cows, hogs, and poultry instead of into elk, deer, and grouse, thence into farmers, flappers, and freshmen instead of Indians. That the flow is voluminous you can determine by consulting the telephone directory, or the roster of government agencies. The flow in this biotic stream is probably much greater than in the pre-Bunyan eras, but curiously enough science has never measured this.

Tame animals and plants have no tenacity as links in the new food chain; they are maintained, artificially, by the labor of farmers, aided by tractors, and abetted by a new kind of animal: the professor of Agriculture. Paul Bunyan's burling was selftaught; now we have a 'prof' standing on the bank giving free instruction.

Each substitution of a tame plant or animal for a wild one, or an artificial waterway for a natural one, is accompanied by a readjustment in the circulating system of the land. We do not understand or foresee these readjustments; we are unconscious of them unless the end effect is bad. Whether it be the President rebuilding Florida for a ship canal, or Farmer Jones rebuilding a Wisconsin meadow for cow pasture, we are too busy with new tinkerings to think of end effects. That so many tinkerings are painless attests the youth and elasticity of the land organism.

One of the penalties of an ecological education is that one lives alone in a world of wounds. Much of the damage inflicted on land is quite invisible to laymen. An ecologist

must either harden his shell and make believe that the consequences of science are none of his business, or he must be the doctor who sees the marks of death in a community that believes itself well and does not want to be told otherwise.

The government tells us we need flood control and comes to straighten the creek in our pasture. The engineer on the job tells us the creek is now able to carry off more flood water, but in the process we have lost our old willows where the owl hooted on a winter night and under which the cows switched flies in the noon shade. We lost the little marshy spot where our fringed gentians bloomed.

Hydrologists have demonstrated that the meanderings of a creek are a necessary part of the hydrologic functioning. The flood plain belongs to the river. The ecologist sees clearly that for similar reasons we can get along with less channel improvement on Round River.

Now to appraise the new order in terms of the two criteria: (1) Does it maintain fertility? (2) Does it maintain a diverse fauna and flora? Soils in the first stages of exploitation display a burst of plant and animal life. The abundant crops that evoked thanksgiving in the pioneers are well known, but there was also a burst of wild plants and animals. A score of imported food-bearing weeds had been added to the native flora, the soil was still rich, and landscape had been diversified by patches of plowland and pasture. The abundance of wildlife reported by the pioneers was in part the response to this diversity.

Such high metabolism is characteristic of newfound lands. It may represent normal circulation, or it may represent the combustion of stored fertility, i.e. biotic fever. One cannot distinguish the fever from normality by asking the biota to bite a thermometer. It can only be told ex post facto by the effect on the soil. What was the effect? The answer is written in gullies on a thousand fields. Crop yields per acre have remained about stationary. The vast technological improvements in farming have only offset the wastage in soil. In some regions, such as the dust bowl, the biotic stream has already shrunk below the point of navigability, and Paul's heirs have moved to California to ferment the grapes of wrath.

As for diversity, what remains of our native fauna and flora remains only because agriculture has not got around to destroying it. The present ideal of agriculture is clean farming; clean farming means a food chain aimed solely at economic profit and purged of all non-conforming links, a sort of Pax Germanica of the agricultural world. Diversity, on the other hand, means a food chain aimed to harmonize the wild and the tame in the joint interest of stability, productivity, and beauty.

Clean farming, to be sure, aspires to rebuild the soil, but it employs to this end only imported plants, animals, and fertilizers. It sees no need for the native flora and fauna that built the soil in the first place. Can stability be synthesized out of imported plants and animals? Is fertility that comes in sacks sufficient? These are the questions at issue.

No living man really knows. Testifying for the workability of clean farming is northeastern Europe, where a degree of biotic stability has been retained (except in humans) despite the wholesale artificialization of the landscape.

Testifying for its non-workability are all the other lands where it has ever been tried, including our own, and the tacit evidence of evolution, in which diversity and stability are so closely intertwined as to seem two names for one fact.

I had a bird dog named Gus. When Gus couldn't find pheasants he worked up an enthusiasm for Sora rails and meadowlarks. This whipped-up zeal for unsatisfactory substitutes masked his failure to find the real thing. It assuaged his inner frustration.

We conservationists are like that. We set out a generation ago to convince the American landowner to control fire, to grow forests, to manage wildlife. He did not respond very well. We have virtually no forestry, and mighty little range management, game management, wildflower management, pollution control, or erosion control being practiced voluntarily by private landowners. In many instances the abuse of private land is worse than it was before we started. If you don't believe that, watch the strawstacks burn on the Canadian prairies; watch the fertile mud flowing down the Rio Grande; watch the gullies climb the hillsides in the Palouse, in the Ozarks, in the riverbreaks of southern Iowa and western Wisconsin.

To assuage our inner frustration over this failure, we have found us a meadowlark. I don't know which dog first caught the scent; I do know that every dog on the field whipped into an enthusiastic backingpoint. I did myself. The meadowlark was the idea that if the private landowner won't practice conservation, let's build a bureau to do it for him.

Like the meadowlark, this substitute has its good points. It smells like success. It is satisfactory on poor land which bureaus can buy. The trouble is that it contains no device for preventing good private land from becoming poor public land. There is danger in the assuagement of honest frustration; it helps us forget we have not yet found a pheasant.

I'm afraid the meadowlark is not going to remind us. He is flattered by his sudden importance.

Considering the prodigious achievements of the profit motive in wrecking land, one hesitates to reject it as a vehicle for restoring land. I incline to believe we have overestimated the scope of the profit motive. Is it profitable for the individual to build a beautiful home? To give his children a higher education? No, it is seldom profitable, yet we do both. These are, in fact, ethical and aesthetic premises which underlie the economic system. Once accepted, economic forces tend to align the smaller details of social organization into harmony with them.

No such ethical and aesthetic premise yet exists for the condition of the land these

children must live in. Our children are our signature to the roster of history; our land is merely the place our money was made. There is as yet no social stigma in the possession of a gullied farm, a wrecked forest, or a polluted stream, provided the dividends suffice to send the youngsters to college. Whatever ails the land, the government will fix it.

I think we have here the root of the problem. What conservation education must build is an ethical underpinning for land economics and a universal curiosity to understand the land mechanism. Conservation may then follow.

Natural History

One saturday night not long ago, two middle-aged farmers set the alarm clock for a dark hour of what proved to be a snowy, blowy Sunday. Milking over, they jumped into a pickup and sped for the sand counties of central Wisconsin, a region productive of tax deeds, tamaracks, and wild hay. In the evening they returned with a truck full of young tamarack trees and a heart full of high adventure. The last tree was planted in the home marsh by lantern-light. There was still the milking.

In Wisconsin 'man bites dog' is stale news compared with 'farmer plants tamarack.' Our farmers have been grubbing, burning, draining, and chopping tamarack since 1840. In the region where these farmers live the tree is exterminated. Why then should they want to replace it? Because after twenty years they hope to reintroduce spagnum moss under the grove, and then lady's-slippers, pitcher plants, and the other nearly extinct wildflowers of the aboriginal Wisconsin bogs.

No extension bureau had offered these farmers any prize for this utterly quixotic undertaking. Certainly no hope of gain motivated it. How then can one interpret its meaning? I call it Revolt—revolt against the tedium of the merely economic attitude toward land. We assume that because we had to subjugate the land to live on it, the best farm is therefore the one most completely tamed. These two farmers have learned from experience that the wholly tamed farm offers not only a slender livelihood but a constricted life. They have caught the idea that there is pleasure to be had in raising wild crops as well as tame ones. They propose to devote a little spot of marsh to growing native wildflowers. Perhaps they wish for their land what we all wish for our children—not only a chance to make a living but also a chance to express and develop a rich and varied assortment of inherent capabilities, both wild and tame. What better expresses land than the plants that originally grew on it?

I talk here about the pleasure to be had in wild things, about natural-history studies as

a combination sport and science.

History has not conspired to make my task an easy one. We naturalists have much to live down. There was a time when ladies and gentlemen wandered afield not so much to learn how the world is put together as to gather subject matter for tea-time conversation. This was the era of dickey-bird ornithology, of botany expressed in bad verse, of ejaculatory vapors such as 'ain't nature grand.' But if you will scan the amateur ornithological or botanical journals of today you will see that a new attitude is abroad. But this is hardly the result of our present system of formal education.

I know an industrial chemist who spends his spare time reconstructing the history of the passenger pigeon and its dramatic demise as a member of our fauna. The pigeon became extinct before this chemist was born, but he has dug up more knowledge of pigeons than anyone had previously possessed. How? By reading every newspaper ever printed in our state, as well as contemporary diaries, letters, and books. I estimate that he has read 100,000 documents in his search for pigeon data. This gigantic labor, which would kill any man undertaking it as a task, fills him with the keen delight of a hunter scouring the hills for scarce deer, of an archeologist digging up Egypt for a scarab. And of course such an undertaking requires more than digging. After he scarab is found its interpretation requires the highest skill—a skill not to be learned from others but rather to be developed by the digger as he digs. Here, then, is a man who has found adventure, exploration, science, and sport, all in the back yard of current history, where millions of lesser men find only boredom.

Another exploration—this time literally of a backyard—is a study of the song sparrow conducted by an Ohio housewife. This commonest of birds had been scientifically labeled and classified a hundred years ago, and forthwith forgotten. Our Ohio amateur had the notion that in birds, as in people, there are things to be known over and above name, sex, and clothes. She began trapping the song sparrows in her garden, marking each with a celluloid anklet, and thus she was able to identify each individual by its colored marker, to observe and record their migrations, feedings, fightings, singings, matings, nestings, and deaths; in short, to decipher the inner workings of the sparrow community. In ten years she knew more about sparrow society, sparrow politics, sparrow economics, and sparrow psychology than anyone had ever learned about any bird. Science beat a path to her door. Ornithologists of all nations seek her counsel.

These two amateurs happen to have achieved fame, but no thought of fame motivated their original work. Fame came ex post facto. It is not fame, however, that I am talking about. They achieved personal satisfactions which are more important than fame, and hundreds of other amateurs are achieving these satisfactions. I now ask: What is our

educational system doing to encourage personal amateur scholarship in the natural-history field? We can perhaps seek an answer to this question by dropping in on a typical class in a typical zoology department. We find there students memorizing the names of the bumps on the bones of a cat. It is important, of course, to study bones; otherwise we should never comprehend the evolutionary process by which animals came into existence. But why memorize the bumps? We are told that this is part of biological discipline. I ask, though, whether a comprehension of the living animal and how it holds its place in the sun is not an equally important part. Unfortunately, the living animal is virtually omitted from the present system of zoological education. In my own university, for example, we offer no course in ornithology or mammalogy.

Botanical education is in like case, except perhaps that the displacement of interest in the living flora had been not quite so extreme.

The reasons for this eviction of outdoor studies from the schools goes back into history. Laboratory biology came into existence at about the time when amateur natural history was of the dickey-bird variety, and when professional natural history consisted of labeling species and amassing facts about food habits without interpreting them. In short, a growing and vital laboratory technique was at that time placed in competition with a stagnated oudoor technique. It was quite natural that laboratory biology soon came to be regarded as the superior form of science. As it grew it crowded natural history out of the educational picture.

The present educational marathon in memorizing the geography of bones is the aftermath of this perfectly logical process of competition. It has, of course, other justifications. Medical students need it; zoology teachers need it. But I contend that the average citizen does not need it so badly as he needs some understanding of the living world.

In the interim, field studies have developed techniques and ideas quite as scientific as those of the laboratory. The amateur student is no longer confined to pleasant ambles in the country resulting merely in lists of species, lists of migration dates, and lists of ratites. Bird banding, feather-marking, censusing, and experimental manipulations of behavior and environment are techniques available to all, and they are quantitative science. The amateur can, if he has imagination and persistence, select and solve actual scientific natural-history problems as virgin as the sun.

The modern view is to regard laboratory and field not as competitive but rather as complementary studies. Curricula, however, do not yet reflect this new situation. It takes money to enlarge curricula, hence the average college student who inclines toward natural history avocations is rebuffed rather than encouraged by his university. Instead of being taught to see his native countryside with appreciation and intelligence, he is taught to carve

cats. Let him be taught both if this is possible, but if one must be omitted let it be the latter.

To visualize more clearly the lopsidedness and sterility of biological education as a means of building citizens, let's go afield with some typical bright student and ask him some questions. We can safely assume he knows how plants grow and cats are put together, but let us test his comprehension of how the land is put together.

We are driving down a country road in northern Missouri. Here is a farmstead. Look at the trees in the yard and the soil in the field and tell us whether the original settler carved his farm out of prairie or woods. Did he eat prairie chicken or wild turkey for his Thanksgiving? What plants grew here originally which do not grow here now? why did they disappear? What did the prairie plants have to do with creating the corn-yielding capacity of this soil? Why does this soil erode now but not then?

Again, suppose we are touring the Ozarks. Here is an abandoned field in which the ragweed is sparse and short. Does this tell us anything about why the mortgage was foreclosed? About how long ago? Would this field be a good place to look for quail? Does short ragweed have any connection with the human story behind yonder graveyard? If all the ragweed in this watershed were short, would that tell us anything about the future of floods in the stream? About the future prospects for bass or trout?

Many students would consider these questions insane, but they are not. Any amateur naturalist with a seeing eye should be able to speculate intelligently on all of them, and have a lot of fun doing it. You will see, too, that modern natural history deals only incidentally with the identity of plants and animals, and only incidentally with their habits and behaviors. It deals principally with their relations to each other, their relation to the soil and water in which they grew, and their relations to the human beings who sing about 'my country' but see little or nothing of its inner workings. This science of relationships is called ecology, but what we call it matters nothing. The question is, does the educated citizen know he is only a cog in an ecological mechanism? That if he will work with that mechanism his mental wealth and his material wealth can expand indefinitely? But that if he refuses to work with it, it will ultimately grind him to dust? If education does not teach us these things, then what is education for?

We shall never achieve harmony with land, any more than we shall achieve absolute justice or liberty for people. In these higher aspirations the important thing is not to achieve, but to strive. It is only in mechanical enterprises that we can expect that early or complete fruition of effort which we call 'success.'

When we say 'striving,' we admit at the outset that the thing we need must grow from within. No striving for an idea was ever injected wholly from without.

The problem, then, is how to bring about a striving for harmony with land among a

people many of whom have forgotten there is any such thing as land, among whom education and culture have become almost synonymous with landlessness. This is the problem of 'conservation education.'

Wildlife in American Culture

The culture of primitive peoples is often based on wildlife. Thus the plains Indian not only ate buffalo, but buffalo largely determined his architecture, dress, language, arts, and religion.

In civilized peoples the cultural base shifts elsewhere, but the culture nevertheless retains part of its wild roots. I here discuss the value of this wild rootage.

No one can weigh or measure culture, hence I shall waste no time trying to do so. Suffice it to say that by common consent of thinking people, there are cultural values in the sports, customs, and experiences that renew contacts with wild things. I venture the opinion that these values are of three kinds.

First there is value in any experience that reminds us of our distinctive national origins and evolution, i.e. that stimulates awareness of history. Such awareness is 'nationalism' in its best sense. For lack of any other short name, I shall call this, in our case, the 'split-rail value.' For example: a boy scout has tanned a coonskin cap, and goes Daniel-Booneing in the willow thicket below the tracks. He is reenacting American history. He is, to that extent, culturally prepared to face the dark and bloody realities of the present. Again: a farmer boy arrives in the schoolroom reeking of muskrat; he has tended his traps before breakfast. He is reenacting the romance of the fur trade. Ontogeny repeats phylogeny in society as well as in the individual.

Second, there is value in any experience that reminds us of our dependency on the soil-plant-animal-man food chain, and of the fundamental organization of the biota. Civilization has so cluttered this elemental man-earth relation with gadgets and middlemen that awareness of it is growing dim. We fancy that industry supports us, forgetting what supports industry. Time was when education moved toward soil, not away from it. The nursery jingle about bringing home a rabbit skin to wrap the baby bunting in is one of many reminders in folk-lore that man once hunted to feed and clothe his family.

Third, there is value in any experience that exercises those ethical restraints collectively called 'sportsmanship.' Our tools for the pursuit of wildlife improve faster than we do, and sportsmanship is a voluntary limitation in the use of these armaments. It is aimed to augment the role of skill and shrink the role of gadgets in the pursuit of wild things.

A peculiar virtue in wildlife ethics is that the hunter ordinarily has no gallery to applaud or disapprove of his conduct. Whatever his acts, they are dictated by his own conscience, rather than by a mob of onlookers. It is difficult to exaggerate the importance of this fact.

Voluntary adherence to an ethical code elevates the self-respect of the sportsman, but it should not be forgotten that voluntary disregard of the code degenerates and depraves him. For example, a common denominator of all sporting codes is not to waste good meat. Yet it is now a demonstrable fact that Wisconsin deer-hunters, in their pursuit of a legal buck, kill and abandon in the woods at least one doe, fawn, or spike buck for every two legal bucks taken out. In other words, approximately half the hunters shoot any deer until a legal deer is killed. The illegal carcasses are left where they fall. Such deer-hunting is not only without social value, but constitutes actual training for ethical depravity elsewhere.

It seems, then, that split-rail and man-earth experiences have zero or plus values, but that ethical experiences may have minus values as well.

This, then, defines roughly three kinds of cultural nutriment available to our outdoor roots. It does not follow that culture is fed. The extraction of value is never automatic; only a healthy culture can feed and grow. Is culture fed by our present forms of outdoor recreation?

The pioneer period gave birth to two ideas that are the essence of split-rail value in outdoor sports. One is the 'go-light' idea, the other the 'one-bullet-one-buck' idea. The pioneer went light of necessity. He shot with economy and precision because he lacked the transport, the cash, and the weapons requisite for machine-gun tactics. Let it be clear, then, that in their inception, both of these ideas were forced on us; we made a virtue of necessity.

In their later evolution, however, they became a code of sportsmanship, a self-imposed limitation on sport. On them is based a distinctively American tradition of self-reliance, hardihood, woodcraft, and marksmanship. These are intangibles, but they are not abstractions. Theodore Roosevelt was a great sportsman, not because he hung up many trophies, but because he expressed this intangible American tradition in words any schoolboy could understand. A more subtle and accurate expression is found in the early writings of Stewart Edward White. It is not far amiss to say that such men created cultural value by being aware of it, and by creating a pattern for its growth.

Then came the gadgeteer, otherwise known as the sporting-goods dealer. He has draped the American outdoorsman with an infinity of contraptions, all offered as aids to self-reliance, hardihood, woodcraft, or marksmanship, but too often functioning as substitutes for them. Gadgets fill the pockets, they dangle from neck and belt. The overflow fills the auto-truck, and also the trailer. Each item of outdoor equipment grows lighter and

often better, but the aggregate poundage becomes tonnage. The traffic in gadgets adds up to astronomical sums, which are soberly published as representing 'the economic value of wildlife.' But what of cultural values?

As an end-case consider the duck-hunter, sitting in a steel boat behind composition decoys. A put-put motor has brought him to the blind without exercise. Canned heat stands by to warm him in case of a chilling wind. He talks to the passing flocks on a factory caller, in what he hopes are seductive tones; home lessons from a phonograph record have taught him how. The decoys work, despite the caller; a flock circles in. It must be shot at before it circles twice, for the marsh bristles with other sportsmen, similarly accoutred, who might shoot first. He opens up at 70 yards, for his polychoke is set for infinity, and the advertisements have told him that Super-Z shells, and plenty of them, have a long reach. The flock flares. A couple of cripples scale off to die elsewhere. Is this sportsman absorbing cultural value? Or is he just feeding minks? The next blind opens up at 75 yards; how else is a fellow to get some shooting? This is duck shooting, current model. It is typical of all public grounds, and of many clubs. Where is the go-light idea, the one-bullet tradition?

The answer is not a simple one. Roosevelt did not disdain the modern rifle; White used freely the aluminum pot, the silk tent, dehydrated foods. Somehow they used mechanical aids, in moderation, without being used by them.

I do not pretend to know what is moderation, or where the line is between legitimate and illegitimate gadgets. It seems clear, though, that the origin of gadgets has much to do with their cultural effects. Homemade aids to sport or outdoor life often enhance, rather than destroy, the man-earth drama; he who kills a trout with his own fly has scored two coups, not one. I use many factory-made gadgets myself. Yet there must be some limit beyond which moneybought aids to sport destroy the cultural value of sport.

Not all sports have degenerated to the same extent as duck-hunting. Defenders of the American tradition still exists. Perhaps the bow-and-arrow movement and the revival of falconry mark the beginnings of a reaction. The net trend, however, is clearly toward more and more mechanization, with a corresponding shrinkage in cultural values, especially split-rail values and ethical restraints.

I have the impression that the American sportsman is puzzled; he doesn't understand what is happening to him. Bigger and better gadgets are good for industry, so why not for outdoor recreation? It has not dawned on him that outdoor recreations are essentially primitive, atavistic; that their value is a contrast-value; that excessive mechanization destroys contrasts by moving the factory to the woods or to the marsh.

The sportsman has no leaders to tell him what is wrong. The sporting press no longer represents sport; it has turned billboard for the gadgeteer. Wildlife administrators are too

busy producing something to shoot at to worry much about the cultural value of the shooting. Because everybody from Xenophon to Teddy Roosevelt said sport has value, it is assumed that this value must be indestructible.

Among non-gunpowder sports, the impact of mechanization has had diverse effects. The modern field glass, camera, and the aluminum bird-band have certainly not deteriorated the cultural value of ornithology. Fishing, but for outboard motors and aluminum canoes, seems less severely mechanized than hunting. On the other hand, motorized transport has nearly destroyed the sport of wilderness travel by leaving only fly-specks of wilderness to travel in.

Fox-hunting with hounds, backwoods style, presents a dramatic instance of partial and perhaps harmless mechanized invasion. This is one of the purest of sports; it has real split-rail flavor; it has man-earth drama of the first water. The fox is deliberately left unshot, hence ethical restraint is also present. But we now follow the chase in Fords! The voice of Bugle Ann mingles with the honk of the flivver! However, no one is likely to invent a mechanical foxhound, or to screw a polychoke on the hound's nose. No one is likely to teach dog-training by phonograph, or by other painless shortcuts. I think the gadgeteer has reached the end of his tether in dogdom.

It is not quite accurate to ascribe all the ills of sport to the inventor of physical aids-to-sport. The advertiser invents ideas, and ideas are seldom as honest as physical objects, even though they may be equally useless. One such deserves special mention: the 'where-to-go' department. Knowledge of the whereabouts of good hunting or fishing is a very personal form of property. It is like rod, dog, or gun: a thing to be loaned or given as a personal courtesy. But to hawk it in the marketplace of the sports column as an aid to circulation seems to me another matter. To hand it to all and sundry as free public 'service' seems to me distinctly another matter. Even 'conser-vation' departments now tell Tom, Dick, and Harry where the fish are biting, and where a flock of ducks has ventured to alight for a meal.

All of these organized promiscuities tend to depersonalize one of the essentially personal elements in outdoor sports. I do not know where the line lies between legitimate and illegitimate practice; I am convinced, though, that 'where-to-go' service has broken all bounds of reason.

If the hunting or fishing is good, the 'where-to-go' service suffices to attract the desired excess of sportsmen. But if it is no good, the advertiser must resort to more forcible means. One such is the fishing lottery, in which a few hatchery fish are tagged, and a prize is offered for the fisherman catching the winning number. This curious hybrid between the techniques of science and of the pool hall insures the overfishing of many an already exhausted lake, and brings a glow of civic pride to many a village Chamber of Commerce.

It is idle for the professional wildlife managers to consider themselves aloof from these affairs. The production engineer and the salesman belong to the same company; both are tarred with the same stick.

Wildlife managers are trying to raise game in the wild by manipulating its environment, and thus to convert hunting from exploitation to cropping. If the conversion takes place, how will it affect cultural values? It must be admitted that split-rail flavor and free-for-all exploitation are historically associated. Daniel Boone had scant patience with agricultural cropping, let alone wildlife cropping. Perhaps the stubborn reluctance of the 'one-gallus' sportsman to be converted to the cropping idea is an expression of his split-rail inheritance. Probably cropping is resisted because it is incompatible with one component of the split-rail tradition: freehunting.

Mechanization offers no cultural substitute for the split-rail values it destroys; at least none visible to me. Cropping or management does offer a substitute, which to me has at least equal value: wild husbandry. The experience of managing land for wildlife crops has the same value as any other form of farming; it is a reminder of the man-earth relation. Moreover ethical restraints are involved; thus managing game without resorting to predator-control calls for ethical restraint of a high order. It may be concluded, then, that game cropping shrinks one value (split-rail) but enhances both of the others.

If we regard outdoor sports as a field of conflict between an immensely vigorous process of mechanization and a wholly static tradition, then the outlook for cultural values is indeed dark. But why cannot our concept of sport grow with the same vigor as our list of gadgets? Perhaps the salvation of cultural value lies in seizing the offensive. I, for one, believe that the time is ripe. Sportsmen can determine for themselves the shape of things to come.

The last decade, for example, has disclosed a totally new form of sport, which does not destroy wildlife, which uses gadgets without being used by them, which outflanks the problem of posted land, and which greatly increases the human carrying capacity of a unit area. This sport knows no bag limit, no closed season. It needs teachers, but not wardens. It calls for a new woodcraft of the highest cultural value. The sport I refer to is wildlife research.

Wildlife research started as a professional priestcraft. The more difficult and laborious research problems must doubtless remain in professional hands, but there are plenty of problems suitable for all grades of amateurs. In the field of mechanical inventions research has long since spread to amateurs. In the biological field the sport-value of amateur research is just beginning to be realized.

Thus Margaret Morse Nice, an amateur ornithologist, studied song sparrows in her back yard. She has become a world-authority on bird behavior, and has out-thought and out-worked many a professional student of social organization in birds. Charles L. Broley, a

banker, banded eagles for fun. He discovered a hitherto unknown fact: that some eagles nest in the South in winter, and then go vacationing to the north woods. Norman and Stuart Criddle, wheat ranchers on the Manitoba prairies, studied the fauna and flora of their farm, and became recognized authorities on everything from local botany to wildlife cycles. Elliott S. Barker, cowman in the New Mexico mountains, has written one of the two best books on that elusive cat: the mountain lion. Do not let anyone tell you that these people made work out of play. They simply realized that the most fun lies in seeing and studying the unknown.

Ornithology, mammalogy, and botany, as now known to most amateurs, are but kindergarten games compared with what is possible for (and open to) amateurs in these fields. One reason for this is that the whole structure of biological education (including education in wildlife) is aimed to perpetuate the professional monopoly on research. To the amateur are allotted only make-believe voyages of discovery, to verify what professional authority already knows. what the youth needs to be told is that a ship is a building in his own mental dry dock, a ship with freedom of the seas.

In my opinion, the promotion of wildlife research sports is the most important job confronting the profession of wildlife management. Wildlife has still another value, now visible only to a few ecologists, but of potential importance to the whole human enterprise.

We now know that animal populations have behavior patterns of which the individual animal is unaware, but which he nevertheless helps to execute. Thus the rabbit is unaware of cycles, but he is the vehicle for cycles.

We cannot discern these behavior patterns in the individual, or in short periods of time. The most intense scrutiny of an individual rabbit tells us nothing of cycles. The cycle concept springs from a scrutiny of the mass through decades.

This raises the disquieting question: do human populations have behavior patterns of which we are unaware, but which we help to execute? Are mobs and wars, unrests and revolutions, cut of such cloth?

Many historians and philosophers persist in interpreting our mass behaviors as the collective result of individual acts of volition. The whole subject matter of diplomacy assumes that the political group has the properties of an honorable person. On the other hand, some economists see the whole of society as a plaything for processes, our knowledge of which is largely ex post facto.

It is reasonable to suppose that our social processes have a higher volitional content than those of the rabbit, but it is also reasonable to suppose that we, as a species, contain population behavior patterns of which nothing is known because circumstance has never evoked them. We may have others the meaning of which we have misread.

This state of doubt about the fundamentals of human population behavior lends ex-

ceptional interest, and exceptional value, to the only available analogue: the higher animals. Errington, among others, has pointed out the cultural value of these animal analogues. For centuries this rich library of knowledge has been inaccessible to us because we did not know where or how to loof of it. Ecology is now teaching us to search in animal populations for analogies to our own problems. By learning how some small part of the biota ticks, we can guess how the whole mechanism ticks. The ability to perceive these deeper meanings, and to appraise them critically, is the woodcraft of the future.

To sum up, wildlife once fed us and shaped our culture. It still yields us pleasure for leisure hours, but we try to reap that pleasure by modern machinery and thus destroy part of its value. Reaping it by modern mentality would yield not only pleasure, but wisdom as well.

The Deer Swath

One hot afternoon in August I sat under the elm, idling, when I saw a deer pass across a small opening a quarter mile east. A deer trail crosses our farm, and at this point any deer traveling is briefly visible from the shack.

I then realized that half an hour before I had moved my chair to the best spot for watching the deer trail; that I had done this habitually for years, without being clearly conscious of it. This led to the thought that by cutting some brush I could widen the zone of visibility. Before night the swath was cleared, and within the month I detected several deer which otherwise could likely have passed unseen.

The new deer swath was pointed out to a series of weekend guests for the purpose of watching their later reactions to it. It was soon clear that most of them forgot it quickly, while others watched it, as I did, whenever chance allowed. The upshot was the realization that there are four categories of outdoors men: deer hunters, duck hunters, bird hunters, and non-hunters. These categories have nothing to do with sex or age, or accoutrements; they represent four diverse habits of the human eye. The deer hunter habitually watches the next bend; the duck hunter watches the skyline; the bird hunter watches the dog; the non-hunter does not watch.

When the deer hunter sits down he sits where he can see ahead, and with his back to something. The duck hunter sits where he can see overhead, and behind something. The non-hunter sits where he is comfortable. None of these watches the dog. The bird hunter watches only the dog, and always knows where the dog is, whether or not visible at the moment. The dog's nose is the bird hunter's eye. Many hunters who carry a shotgun in

season have never learned to watch the dog, or to interpret his reactions to scent.

There are good outdoors men who do not conform to these categories. There is the ornithologist who hunts by ear, and uses the eye only to follow up on what his ear had detected. There is the botanist who hunts by eye, but at much closer range; he is a marvel at finding plants, but seldom sees birds or mammals. There is the forester who sees only trees, and the insects and fungi that prey upon trees; he is oblivious to all else. And finally there is the sportsman who sees only game, and regards all else as of little interest or value.

There is one illusive mode of hunting which I cannot associate exclusively with any of these groups: the search for scats, tracks, feathers, dens, roostings, rubbings, dustings, diggings, feedings, fightings, or preyings collectively known to woodsmen as 'reading sign.' This skill is rare, and too often seems to be inverse to book learning.

The counterpart of reading animal sign exists in the plant field, but skill is equally rare in occurrence and illusive in distribution. To prove this I cite the African explorer who detected the scratchings of a lion on the bark of a tree. 20 feet up. The scratchings, he said, had been made when the tree was young.

The biological jack-of-all-trades called ecologist tries to be and do all these things. Needless to say, he does not succeed.

Goose Music

Some years ago the game of golf was commonly regarded in this country as a kind of social ornament, a pretty diversion for the idle rich, but hardly worthy of the curiosity, much lees of the serious interest, of men of affairs. Today scores of cities are building municipal golf courses to make golf available to the rank and file of their citizens.

The game change in point of view has occurred toward most other outdoor sports—the frivolities of fifty years ago have become the social necessities of today. But strangely enough, this change is only just beginning to permeate our attitude toward the oldest and most universal of all sports, hunting and fishing.

We have realized dimly, of course, that a day afield was good for the tired businessman. We have also realized that the destruction of wildlife removed the incentive for days afield. But we have not yet learned to express the value of wildlife in terms of social welfare. Some have attempted to justify wildlife conservation in terms of meat, others in terms of personal pleasure, others in terms of cash, still others in the interest of science, education, agriculture, art, public health, and even military preparedness. But few have so far clearly realized and expressed the whole truth, namely, that all these things are but factors in broad social

value, and that wildlife, like golf, is a social asset.

But to those whose hearts are stirred by the sound of whistling wings and quacking mallards, wildlife is something even more than this. It is not merely an acquired taste; the instinct that finds delight in the sight and pursuit of game is bred into the very fiber of the race. Golf is sophisticated exercise, but the love of hunting is almost a physiological characteristic. A man may not care for golf and still be human, but the man who does not like to see, hunt, photograph, or otherwise outwit birds or animals is hardly normal. He is supercivilized, and I for one do not know how to deal with him. Babes do not tremble when they are shown a golf ball, but I should not like to own the boy whose hair does not lift his hat when he sees his first deer. We are dealing, therefore, with something that lies very deep. Some can live without opportunity for the exercise and control of the hunting instinct, just as I suppose some can live without work, play, love, business, or other vital adventure. But in these days we regard such deprivations as unsocial. Opportunity for exercise of all the normal instincts has come to be regarded more and more as an inalienable right. The men who are destroying our wildlife are alienating one of these rights, and doing a thorough job of it. More than that, they are doing a permanent job of it. When the last corner lot is covered with tenements we can still make a playground by tearing them down, but when the last antelope goes by the board, not all the playground associations in Christendom can do aught to replace the loss.

If wild birds and animals are a social asset, how much of an asset are they? It is easy to say that some of us, afflicted with hereditary hunting fever, cannot live satisfactory lives without them. But this does not establish any comparative value, and in these days it is sometimes necessary to choose between necessities. In short, what is a wild goose worth? I have a ticket to the symphony. It was not cheap. The dollars were well spent, but I would forgo the experience for the sight of the big gander that sailed honking into my decoys at daybreak this morning. It was bitter cold and I was all thumbs, so I blithely missed him. But miss or no miss, I saw him, I heard the wind whistle through his set wings as he came honking out of the gray west, and I felt him so that even now I tingle at the recollection. I doubt not that this very gander has given ten other men a symphony ticket's worth of thrills.

My notes tell me I have seen a thousand geese this fall. Every one of these in the course of their epic journey from the arctic to the gulf has on one occasion or another probably served man in some equivalent of paid entertainment. One flock perhaps has thrilled a score of schoolboys, and sent them scurrying home with tales of high adventure. Another, passing overhead of a dark night, has serenaded a whole city with goose music, and awakened who knows what questionings and memories and hopes. A third perhaps has given pause to some

farmer at his plow, and brought new thoughts of far lands and journeyings and peoples, where before was only drudgery, barren of any thought at all. I am sure those thousand geese are paying human dividends on a dollar value. Worth in dollars is only an exchange value, like the sale value of a painting or the copyright of a poem. What about the replacement value? Supposing there were no longer any painting, or poetry, or goose music? It is a black thought to dwell upon, but it must be answered. In dire necessity somebody might write another Iliad, or paint an 'Angelus,' but fashion a goose? 'I, the Lord, will answer them. The hand of the Lord hath done this, and the Holy One of Israel created it.'

Is it impious to weigh goose music and art in the same scales? I think not, because the true hunter is merely a noncreative artist. Who painted the first picture on a bone in the caves of France? A hunter. Who alone in our modern life so thrills to the sight of living beauty that he will endure hunger and thirst and cold to feed his eye upon it? The hunter. Who wrote the great hunter's poem about the sheer wonder of the wind, the hail, and the snow, the stars, the lightnings, and the clouds, the lion, the deer, and the wild goat, the raven, the hawk, and the eagle, and above all the eulogy of the horse? Job, one of the great dramatic artists of all time. Poets sing and hunters scale the mountains primarily for one and the same reason—the thrill to beauty. Critics write and hunters outwit their game primarily for one and the same reason—to reduce that beauty to possession. The differences are largely matters of degree, consciousness, and that sly arbiter of the classification of human activities, language. If, then, we can live without goose music, we may as well do away with stars, or sunsets, or Iliads. But the point is that we would be fools to do away with any of them.

What value has wildlife from the standpoint of morals and religion? I heard of a boy once who was brought up an atheist. He changed his mind when he saw that there were a hundred-odd species of warblers, each bedecked like to the rainbow, and each performing yearly sundry thousands of miles of migration about which scientists wrote wisely but did not understand. No 'fortuitous concourse of elements' working blindly through any number of millions of years could quite account for why warblers are so beautiful. No mechanistic theory, even bolstered by mutations, has ever quite answered for the colors of the cerulean warbler, or the vespers of the woodthrush, or the swansong, or—goose music. I dare say this boy's convictions would be harder to shake than those of many inductive theologians. There are yet many boys to be born who, like Isaiah, 'may see, and know, and consider, and understand together, that the hand of the Lord hath done this. But where shall they see, and know, and consider? In museums?

What is the effect of hunting and fishing on character as compared with other outdoor sports? I have already pointed out that the desire lies deeper, that its source is a matter of

instinct as well as of competition. A son of a Robinson Crusoe, having never seen a tennis racket, might get along nicely without one, but he would be pretty sure to hunt or fish whether or not he were taught to do so. But this does not establish any superiority as to subjective benefits. Which helps the more to build a man? This question (like the one we used to debate in school about whether boys or girls are the best scholars) might be argued till doomsday. I shall not attempt it. But there are two points about hunting that deserve special emphasis. One is that the ethics of sportsmanship is not a fixed code, but must be formulated and practiced by the individual, with no referee but the Almighty. The other is that hunting generally involves the handling of dogs and horses, and the lack of this experience is one of the most serious defects of our gasoline-driven civilization. There was much truth in the old idea that any man ignorant of dogs and horses was not a gentleman. In the West the abuse of horses is still a universal blackball. This rule of thumb was adopted in the cow country long before 'character analysis' was invented and, for all we know, may yet outlive it.

But after all, it is poor business to prove that one good thing is better than another. The point is that some six or eight millions of Americans like to hunt and fish, that the hunting fever is endemic in the race, that the race is benefited by any incentive to get out into the open, and is being injured by the destruction of the incentive in this case. To combat this destruction is therefore a social issue.

To conclude: I have congenital hunting fever and three sons. As little tots, they spent their time playing with my decoys and scouring vacant lots with wooden guns. I hope to leave them good health, an education, and possibly even a competence. But what are they going to do with these things if there be no more deer in the hills, and no more quail in the coverts? No more snipe whistling in the meadow, no more piping of widgeons and chattering of teal as darkness covers the marshes; no more whistling of swift wings when the morning star pales in the east? And when the dawn-wind stirs through the ancient cottonwoods, and the gray light steals down from the hills over the old river sliding softly past its wide brown sandbars——what if there be no more goose music?

Part IV
The Upshot

The Land Ethic

When god-like Odysseus returned from the wars in Troy, he hanged all on one rope a dozen slave-girls of his household whom he suspected of misbehavior during his absence.

This hanging involved no question of propriety. The girls were property. The disposal of property was then, as now, a matter of expediency, not of right and wrong.

Concepts of right and wrong were not lacking from Odysseus' Greece: witness the fidelity of his wife through the long years before at last his blackprowed galleys clove the wine-dark seas for home. The ethical structure of that day covered wives, but had not yet been extended to human chattels. During the three thousand years which have since elapsed, ethical criteria have been extended to many fields of conduct, with corresponding shrinkages in those judged by expediency only.

The Ethical Sequence

This extension of ethics, so far studied only by philosophers, is actually a process in ecological evolution. Its sequences may be described in ecological as well as in philosophical terms. An ethic, ecologically, is a limitation on freedom of action in the struggle for existence. An ethic, philosophically, is a differentiation of social from anti-social conduct. These are two definitions of one thing. The thing has its origin in the tendency of interdependent individuals or groups to evolve modes of co-operation. The ecologist calls these symbioses. Politics and economics are advanced symbioses in which the original free-for-

all competition has been replaced, in part, by co-operative mechanisms with an ethical content.

The complexity of co-operative mechanisms has increased with population density, and with the efficiency of tools. It was simpler, for example, to define the anti-social uses of sticks and stones in the days of the mastodons than of bullets and billboards in the age of motors.

The first ethics dealt with the relation between individuals; the Mosaic Decalogue is an example. Later accretions dealt with the relation between the individual and society. The Golden Rule tries to integrate the individual to society; democracy to integrate social organization to the individual.

There is as yet no ethic dealing with man's relation to land and to the animals and plants which grow upon it. Land, like Odysseus' slave-girls, is still property. The land-relation is still strictly economic, entailing privileges but not obligations.

The extension of ethics to this third element in human environment is, if I read the evidence correctly, an evolutionary possibility and an ecological necessity. It is the third step in a sequence. The first two have already been taken. Individual thinkers since the days of Ezekiel and Isaiah have asserted that the despoliation of land is not only inexpedient but wrong. Society, however, has not yet affirmed their belief. I regard the present conservation movement as the embryo of such an affirmation.

An ethic may be regarded as a mode of guidance for meeting ecological situations so new or intricate, or involving such deferred reactions, that the path of social expediency is not discernible to the average individual. Animal instincts are modes of guidance for the individual in meeting such situations. Ethics are possibly a kind of community instinct in-the-making.

The Community Concept

All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in the community, but his ethics prompt him also to co-operate (perhaps in order that there may be a place to compete for).

The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land.

This sounds simple: do we not already sing our love for and obligation to the land of the free and the home of the brave? Yes, but just what and whom do we love? Certainly not the soil, which we are sending helter-skelter downriver. Certainly not the waters, which we assume have no function except to turn turbines, float barges, and carry off sewage. Cer-

tainly not the plants, of which we exterminate whole communities without batting an eye. Certainly not the animals, of which we have already extirpated many of the largest and most beautiful species. A land ethic of course cannot prevent the alteration, management, and use of these 'resources,' but it does affirm their right to continued existence, and, at least in spots, their continued existence in a natural state.

In short, a land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.

In human history, we have learned (I hope) that the conqueror role is eventually self-defeating. Why? Because it is implicit in such a role that the conqueror knows, ex cathedra, just what makes the community clock tick, and just what and who is valuable, and what and who is worthless, in community life. It always turns out that he knows neither, and this is why his conquests eventually defeat themselves.

In the biotic community, a parallel situation exists. Abraham knew exactly what the land was for: it was to drip milk and honey into Abraham's mouth. At the present moment, the assurance with which we regard this assumption is inverse to the degree of our education.

The ordinary citizen today assumes that science knows what makes the community clock tick; the scientist is equally sure that he does not. He knows that the biotic mechanism is so complex that its workings may never be fully understood.

That man is, in fact. Only a member of a biotic team is shown by an ecological interpretation of history. Many historical events, hitherto explained solely in terms of human enterprise, were actually biotic interactions between people and land. The characteristics of the land determined the facts quite as potently as the character-istics of the men who lived on it.

Consider, for example, the settlement of the Mississippi valley. In the years following the Revolution, three groups were contending for its control: the native Indian, the French and English traders, and the American settlers. Historians wonder what would have happened if the English at Detroit had thrown a little more weight into the Indian side of those tipsy scales which decided the outcome of the colonial migration into the cane-lands of Kentucky. It is time now to ponder the fact that the cane-lands, when subjected to the particular mixture of forces represented by the cow, plow, fire, and axe of the pioneer, became bluegrass. What if the plant succession inherent in this dark and bloody ground had, under the impact of these forces, given us some worthless sedge, shrub, or weed? Would Boone and Kenton have held out? Would there have been any overflow into Ohio, Indiana, Illinois, and Missouri? Any Louisiana Purchase? Any transcontinental union of new states? Any Civil War?

Kentucky was one sentence in the drama of history. We are commonly told what the

human actors in this drama tried to do, but we are seldom told that their success, or the lack of it, hung in large degree on the reaction of particular soils to the impact of the particular forces exerted by their occupancy. In the case of Kentucky, we do not even know where the bluegrass came from——whether it is a native species, or a stowaway from Europe.

Contrast the cane-lands with what hindsight tells us about the Southwest, where the pioneers were equally brave, resourceful, and persevering. The impact of occupancy here brought no bluegrass, or other plant fitted to withstand the bumps and buffetings of hard use. This region, when grazed by livestock, reverted through a series of more and more worthless grasses, shrubs, and weeds to a condition of unstable equilibrium. Each recession of plant types bred erosion; each increment to erosion bred a further recession of plants. The result today is a progressive and mutual deterioration, not only of plants and soils, but of the animal community subsisting thereon. The early settlers did not expect this: on the ci negas of New Mexico some even cut ditches to hasten it. So subtle has been its progress that few residents of the region are aware of it. It is quite invisible to the tourist who finds this wrecked landscape colorful and charming (as indeed it is, but it bears scant resemblance to what it was in 1848).

This same landscape was 'developed' once before, but with quite different results. The Pueblo Indians settled the Southwest in pre-Columbian times, but they happened not to be equipped with range livestock. Their civilization expired, but not because their land expired.

In India, regions devoid of any sod-forming grass have been settled, apparently without wrecking the land, by the simple expedient of carrying the grass to the cow, rather than vice versa. (Was this the result of some deep wisdom, or was it just good luck? I do not know.)

In short, the plant succession steered the course of history; the pioneer simply demonstrated, for good or ill, what successions inhered in the land. Is history taught in this spirit? It will be, once the concept of land as a community really penetrates our intellectual life.

The Ecological Conscience

Conservation is a state of harmony between men and land. Despite nearly a century of propaganda, conser-vation still proceeds at a snail's pace; progress still consists largely of letterhead pieties and convention oratory. On the back forty we still slip two steps backward for each forward stride.

The usual answer to this dilemma is 'more conservation education.' No one will debate this, but is it certain that only the volume of education needs stepping up? Is something

lacking in the content as well?

It is difficult to give a fair summary of its content in brief form, but, as I understand it, the content is substantially this: obey the law, vote right, join some organizations, and practice what conservation is profitable on your own land; the government will do the rest.

Is not this formula too easy to accomplish anything worth-while? It defines no right or wrong, assigns no obligation, calls for no sacrifice, implies no change in the current philosophy of values. In respect of land-use, it urges only enlightened self-interest. Just how far will such education take us? An example will perhaps yield a partial answer.

By 1930 it had become clear to all except the ecologically blind that southwestern Wisconsin's topsoil was slipping seaward. In 1933 the farmers were told that if they would adopt certain remedial practices for five years, the public would donate CCC labor to install them, plus the necessary machinery and materials. The offer was widely accepted, but the practices were widely forgotten when the five-year contract period was up. The farmers continued only those practices that yielded an immediate and visible economic gain for themselves.

This led to the idea that maybe farmers would learn more quickly if they themselves wrote the rules. Accordingly the Wisconsin Legislature in 1937 passed the Soil Conservation District Law. This said to farmers, in effect: We, the public, will furnish you free technical service and loan you specialized machinery, if you will write your own rules for land-use. Each county may write its own rules, and these will have the force of law. Nearly all the counties promptly organized to accept the proffered help, but after a decade of operation, no county has yet written a single rule. There has been visible progress in such practices as strip-cropping, pasture renovation, and soil liming, but none in fencing woodlots against grazing, and none in excluding plow and cow from steep slopes. The farmers, in short, have selected those remedial practices which were profitable anyhow, and ignored those which were profitable to the community, but not clearly profitable to themselves.

When one asks why no rules have been written, one is told that the community is not yet ready to support them; education must precede rules. But the education actually in progress makes no mention of obligations to land over and above those dictated by self-interest. The net result is that we have more education but less soil, fewer healthy woods, and as many floods as in 1937.

The puzzling aspect of such situations is that the existence of obligations over and above self-interest is taken for granted in such rural community enterprises as the betterment of roads, schools, churches, and baseball teams. Their existence is not taken for granted, nor as yet seriously discussed, in bettering the behavior of the water that falls on the land, or in the preserving of the beauty or diversity of the farm landscape. Land-use

ethics are still governed wholly by economic self-interest, just as social ethics were a century ago.

To sum up: we asked the farmer to do what he conveniently could to save his soil, and he has done just that, and only that. The farmer who clears the woods off a 75 percent slope, turns his cows into the clearing, and dumps its rainfall, rocks, and soil into the community creek, is still (if otherwise decent) a respected member of society. If he puts lime on his fields and plants his crops on contour, he is still entitled to all the privileges and emoluments of his Soil Conservation District. The District is a beautiful piece of social machinery, but it is coughing along on two cylinders because we have been too timid, and too anxious for quick success, to tell the farmer the true magnitude of his obligations. Obligations have no meaning without conscience, and the problem we face is the extension of the social conscience from people to land.

No important change in ethics was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions. The proof that conservation has not yet touched these foundations of conduct lies in the fact that philosophy and religion have not yet heard of it. In our attempt to make conservation easy, we have made it trivial.

Substitutes for a Land Ethic

When the logic of history hungers for bread and we hand out a stone, we are at pains to explain how much the stone resembles bread. I now describe some of the stones which serve in lieu of a land ethic.

One basic weakness in a conservation system based wholly on economic motives is that most members of the land community have no economic value. Wildflowers and songbirds are examples. Of the 22,000 higher plants and animals native to Wisconsin, it is doubtful whether more than 5 per cent can be sold, fed, eaten, or otherwise put to economic use. Yet these creatures are members of the biotic community, and if (as I believe) its stability depends on its integrity, they are entitled to continuance.

When one of these non-economic categories is threatened, and if we happen to love it, we invent subterfuges to give it economic importance. At the beginning of the century songbirds were supposed to be disappearing. Ornithologists jumped to the rescue with some distinctly shaky evidence to the effect that insects would eat us up if birds failed to control them. The evidence had to be economic in order to be valid.

It is painful to read these circumlocutions today. We have no land ethic yet, but we have at least drawn nearer the point of admitting that birds should continue as a matter of biotic right, regardless of the presence or absence of economic advantage to us.

A parallel situation exists in respect of predatory mammals, raptorial birds, and fish-eating birds. Time was when biologists somewhat overworked the evidence that these creatures preserve the health of game by killing weaklings, or that they control rodents for the farmer, or that they prey only on 'worthless' species. Here again, the evidence had to be economic in order to be valid. It is only in recent years that we hear the more honest argument that predators are members of the community, and that no special interest has the right to exterminate them for the sake of a benefit, real or fancied, to itself. Unfortunately this enlightened view is still in the talk stage. In the field the extermination of predators goes merrily on: witness the impending erasure of the timber wolf by fiat of Congress, the Conservation Bureaus, and many state legislatures.

Some species of trees have been 'read out of the party' by economics-minded foresters because they grow too slowly, or have too low a sale value to pay as timber crops: white cedar, tamarack, cypress, beech, and hemlock are examples. In Europe, where forestry is ecologically more advanced, the non-commercial tree species are recognized as members of the native forest community, to be preserved as such, within reason. Moreover some (like beech) have been found to have a valuable function in building up soil fertility. The interdependence of the forest and its constituent tree species, ground flora, and fauna is taken for granted.

Lack of economic value is sometimes a character not only of species or groups, but of entire biotic communities: marshes, bogs, dunes, and 'deserts' are examples. Our formula in such cases is to relegate their conservation to government as refuges, monuments, or parks. The difficulty is that these communities are usually interspersed with more valuable private lands; the government cannot possibly own or control such scattered parcels. The net effect is that we have relegated some of them to ultimate extinction over large areas. If the private owner were ecologically minded, he would be proud to be the custodian of a reasonable proportion of such areas, which add diversity and beauty to his farm and to his community.

In some instances, the assumed lack of profit in these 'waste' areas has proved to be wrong, but only after most of them had been done away with. The present scramble to reflood muskrat marshes is a case in point.

There is a clear tendency in American conservation to relegate to government all necessary jobs that private landowners fail to perform. Government ownership, operation, subsidy, or regulation is now widely prevalent in forestry, range management, soil and watershed management, park and wilderness conservation, fisheries management, and migratory bird management, with more to come. Most of this growth in governmental conservation is proper and logical, some of it is inevitable. That I imply no disapproval of it is

implicit in the fact that I have spent most of my life working for it. Nevertheless the question arises: What is the ultimate magnitude of the enterprise? Will the tax base carry its eventual ramifications? at what point will governmental conservation, like the mastodon, become handicapped by its own dimensions? The answer, if there is any, seems to be in a land ethic, or some other force which assigns more obligation to the private landowner.

Industrial landowners and users, especially lumbermen and stockmen, are inclined to wail long and loudly about the extension of government ownership and regulation to land, but (with notable exceptions) they show little disposition to develop the only visible alternative: the voluntary practice of conservation on their own lands.

When the private landowner is asked to perform some unprofitable act for the good of the community, he today assents only with outstretched palm. If the act costs him cash this is fair and proper, but when it costs only fore-thought, open-mindedness, or time, the issue is at least debatable. The overwhelming growth of land-use subsidies in recent years must be ascribed, in large part, to the government's own agencies for conservation education: the land bureaus, the agricultural colleges, and the extension services. As far as I can detect, no ethical obligation toward land is taught in these institutions.

To sum up: a system of conservation based solely on economic self-interest is hopelessly lopsided. It tends to ignore, and thus eventually to eliminate, many elements in the land community that lack commercial value, but that are (as far as we know) essential to its healthy functioning. It assumes, falsely, I think, that the economic parts of the biotic clock will function without the uneconomic parts. It tends to relegate to government many functions eventually too large, too complex, or too widely dispersed to be performed by government.

An ethical obligation on the part of the private owner is the only visible remedy for thesesituations.

The Land Pyramid

An ethic to supplement and guide the economic relation to land presupposes the existence of some mental image of land as a biotic mechanism. We can be ethical only in relation to something we can see, feel, understand, love, or otherwise have faith in.

The image commonly employed in conservation education is 'the balance of nature.' For reasons too lengthy to detail here, this figure of speech fails to describe accurately what little we know about the land mechanism. A much truer image is the one employed in ecology: the biotic pyramid. I shall first sketch the pyramid as a symbol of land, and later develop some of its implications in terms of land-use.

Plants absorb energy from the sun. This energy flows through a circuit called the biota,

which may be represented by a pyramid consisting of layers. The bottom layer is the soil. A plant layer rests on the soil, an insect layer on the plants, a bird and rodent layer on the insects, and so on up through various animal groups to the apex layer, which consists of the largercarnivores.

The species of a layer are alike not in where they came from, or in what they look like, but rather in what they eat. Each successive layer depends on those below it for food and often for other services, and each in turn furnishes food and services to those above. Proceeding upward, each successive layer decreases in numerical abundance. Thus, for every carnivore there are hundreds of his prey, thousands of their prey, millions of insects, uncountable plants. The pyramidal form of the system reflects this numerical progression from apex to base. Man shares an intermediate layer with the bears, raccoons, and squirrels which eat both meat and vegetables.

The lines of dependency for food and other services are called food chains. Thus soil-oak-deer-Indian is a chain that has now been largely converted to soilcorn-cow-farmer. Each species, including ourselves, is a link in many chains. The deer eats a hundred plants other than oak, and the cow a hundred plants other than corn. Both, then, are links in a hundred chains. The pyramid is a tangle of chains so complex as to seem disorderly, yet the stability of the system proves it to be a highly organized structure. Its functioning depends on the co-operation and competition of its diverse parts.

In the beginning, the pyramid of life was low and squat; the food chains short and simple. Evolution has added layer after layer, link after link. Man is one of thousands of accretions to the height and complexity of the pyramid. Science has given us many doubts, but it has given us at least one certainty: the trend of evolution is to elaborate and diversify thebiota.

Land, then, is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants, and animals. Food chains are the living channels which conduct energy upward; death and decay return it to the soil. The circuit is not closed; some energy is dissipated in decay, some is added by absorption from the air, some is stored in soils, peats, and longlived forests; but it is a sustained circuit, like a slowly augmented revolving fund of life. There is always a net loss by downhill wash, but this is normally small and offset by the decay of rocks. It is deposited in the ocean and, in the course of geological time, raised to form new lands and new pyramids.

The velocity and character of the upward flow of energy depend on the complex structure of the plant and animal community, much as the upward flow of sap in a tree depends on its complex cellular organization. Without this complexity, normal circulation would presumably not occur. Structure means the characteristic numbers, as well as the

characteristic kinds and functions, of the component species. This interdependence between the complex structure of the land and its smooth functioning as an energy unit is one of its basicattributes.

When a change occurs in one part of the circuit, many other parts must adjust themselves to it. Change does not necessarily obstruct or divert the flow of energy; evolution is a long series of self-induced changes, the net result of which has been to elaborate the flow mechanism and to lengthen the circuit. Evolutionary changes, however, are usually slow and local. Man's invention of tools has enabled him to make changes of unprecedented violence, rapidity, and scope.

One change is in the composition of floras and faunas. The larger predators are lopped off the apex of the pyramid; food chains, for the first time in history, become shorter rather than longer. Domesticated species from other lands are substituted for wild ones, and wild ones are moved to new habitats. In this world-wide pooling of faunas and floras, some species get out of bounds as pests and diseases, others are extinguished. Such effects are seldom intended or foreseen; they represent unpredicted and often untraceable readjustments in the structure. Agricultural science is largely a race between the emergence of new pests and the emergence of new techniques for their control.

Another change touches the flow of energy through plants and animals and its return to the soil. Fertility is the ability of soil to receive, store, and release energy. Agriculture, by overdrafts on the soil, or by too radical a substitution of domestic for native species in the superstructure, may derange the channels of flow or deplete storage. Soils depleted of their storage, or of the organic matter which anchors it, wash away faster than they form. This is erosion.

Waters, like soil, are part of the energy circuit. Industry, by polluting waters or obstructing them with dams, may exclude the plants and animals necessary to keep energy in circulation.

Transportation brings about another basic change: the plants or animals grown in one region are now consumed and returned to the soil in another. Transportation taps the energy stored in rocks, and in the air, and uses it elsewhere; thus we fertilize the garden with nitrogen gleaned by the guano birds from the fishes of seas on the other side of the Equator. Thus the formerly localized and self-contained circuits are pooled on a world-wide scale.

The process of altering the pyramid for human occupation releases stored energy, and this often gives rise, during the pioneering period, to a deceptive exuberance of plant and animal life, both wild and tame. These releases of biotic capital tend to becloud or postpone the penalties of violence.

This thumbnail sketch of land as an energy circuit conveys three basic ideas:

(1) That land is not merely soil.

(2) That the native plants and animals kept the energy circuit open; others may or may not.

(3) That man-made changes are of a different order than evolutionary changes, and have effects more comprehensive than is intended or foreseen.

These ideas, collectively, raise two basic issues: Can the land adjust itself to the new order? Can the desired alterations be accomplished with less violence?

Biotas seem to differ in their capacity to sustain violent conversion. Western Europe, for example, carries a far different pyramid than Gaesar found there. Some large animals are lost; swampy forests have become mead-ows or plowland; many new plants and animals are introduced, some of which escape as pests; the remaining natives are greatly changed in distribution and abundance. Yet the soil is still there and, with the help of imported nutrients, still fertile; the waters flow normally; the new structure seems to function and to persist. There is no visible stoppage or derangement of the circuit.

Western Europe, then, has a resistant biota. Its inner processes are tough, elastic, resistant to strain. No matter how violent the alterations, the pyramid, so far, has developed some new modus vivendi which preserves its habitability for man, and for most of the other natives.

Japan seems to present another instance of radical conversion without disorganization.

Most other civilized regions, and some as yet barely touched by civilization, display various stages of disorganization, varying form initial symptoms to advanced wastage. In Asia Minor and North Africa diagnosis is confused by climatic changes, which may have been either the cause or the effect of advanced wastage. In the United States the degree of disorganization varies locally; it is worst in the Southwest, the Ozarks, and parts of the South, and least in New England and the Northwest. Better land-uses may still arrest it in the less advanced regions. In parts of Mexico, South America, South Africa, and Australia a violent and accelerating wastage is in progress, but I cannot assess the prospects.

This almost world-wide display of disorganization in the land seems to be similar to disease in an animal, except that it never culminates in complete disorganization or death. The land recovers, but at some reduced level of complexity, and with a reduced carrying capacity for people, plants, and animals. Many biotas currently regarded as 'lands of opportunity' are in fact already subsisting on exploitative agriculture, i.e. they have already exceeded their sustained carrying capacity. Most of South America is overpopulated in this sense.

In arid regions we attempt to offset the process of wastage by reclamation, but it is only too evident that the prospective longevity of reclamation projects is often short. In our own

West, the best of them may not last a century.

The combined evidence of history and ecology seems to support one general deduction: the less violent the man-made changes, the greater the probability of successful readjustment in the pyramid. Violence, in turn, varies with human population density; a dense population requires a more violent conversion. In this respect, North America has a better chance for permanence than Europe, if she can contrive to limit her density.

This deduction runs counter to our current philosophy, which assumes that because a small increase in density enriched human life, that an indefinite increase will enrich it indefinitely. Ecology knows of no density relationship that holds for indefinitely wide limits. All gains from density are subject to a law of diminishing returns.

Whatever may be the equation for men and land, it is improbable that we as yet know all its terms. Recent discoveries in mineral and vitamin nutrition reveal unsuspected dependencies in the up-circuit: incredibly minute quantities of certain substances determine the value of soils to plants, of plants to animals. What of the down-circuit? What of the vanishing species, the preservation of which we now regard as an esthetic luxury? They helped build the soil; in what unsuspected ways may they be essential to its maintenance? Professor Weaver proposes that we use prairie flowers to reflocculate the wasting soils of the dust bowl; who knows for what purpose cranes and condors, otters and grizzlies may some day be used?

Land Health and the A-B Cleavage

A land, ethic, then, reflects the existence of an ecological conscience, and this in turn reflects a conviction of individual responsibility for the health of the land. Health is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve thiscapacity.

Conservationists are notorious for their dissensions. Superficially these seem to add up to mere confusion, but a more careful scrutiny reveals a single plane of cleavage common to many specialized fields. In each field one group (A) regards the land as soil, and its function as commodity-production; another group (B) regards the land as a biota, and its function as something broader. How much broader is admittedly in a state of doubt and confusion.

In my own field, forestry, group A is quite content to grow trees like cabbages, with cellulose as the basic forest commodity. It feels no inhibition against violence; its ideology is agronomic. Group B, on the other hand, sees forestry as fundamentally different from agronomy because it employs natural species, and manages a natural environment rather than creating an artificial one. Group B prefers natural reproduction on principle. It worries

on biotic as well as economic grounds about the loss of species like chestnut, and the threatened loss of the white pines. It worries about a whole series of secondary forest functions: wildlife, recreation, watersheds, wilderness areas. To my mind, Group B feels the stirrings of an ecological conscience.

In the wildlife field, a parallel cleavage exists. For Group A the basic commodities are sport and meat; the yardsticks of production are ciphers of take in pheasants and trout. Artificial propagation is acceptable as a permanent as well as a temporary recourse—if its unit costs permit. Group B, on the other hand, worries about a whole series of biotic side-issues. What is the cost in predators of producing a game crop? Should we have further recourse to exotics? How can management restore the shrinking species, like prairie grouse, already hopeless as shootable game? How can management restore the threatened ratites, like trumpeter swan and whooping crane? Can management principles be extended to wildflowers? Here again it is clear to me that we have the same A-B cleavage as in forestry.

In the larger field of agriculture I am less competent to speak, but there seem to be somewhat parallel cleavages. Scientific agriculture was actively developing before ecology was born, hence a slower penetration of ecological concepts might be expected. Moreover the farmer, by the very nature of his techniques, must modify the biota more radically than the forester or the wildlife manager. Nevertheless, there are many discontents in agriculture which seem to add up to a new vision of 'biotic farming.'

Perhaps the most important of these is the new evidence that poundage or tonnage is no measure of the food-value of farm crops; the products of fertile soil may be qualitatively as well as quantitatively superior. We can bolster poundage from depleted soils by pouring on imported fertility, but we are not necessarily bolstering food-value. The possible ultimate ramifications of this idea are so immense that I must leave their exposition to abler pens.

The discontent that labels itself 'organic farming,' while bearing some of the earmarks of a cult, is neverthe-less biotic in its direction, particularly in its insistence on the importance of soil flora and fauna.

The ecological fundamentals of agriculture are just as poorly known to the public as in other fields of land-use. For example, few educated people realize that the marvelous advances in technique made during recent decades are improvements in the pump, rather than the well. Acre for acre, they have barely sufficed to offset the sinking level of fertility.

In all of these cleavages, we see repeated the same basic paradoxes: man the conqueror versus man the biotic citizen; science the sharpener of his sword versus science the searchlight on his universe; land the slave and servant versus land the collective organism. Robinson's injunction to Tristram may well be applied, at this juncture, to Homo sapiens as a species in geological time:

Whether you will or not
You are a King, Tristram, for you are one
Of the time-tested few that leave the world,
When they are gone, not the same place it was.
Mark what you leave.

The Outlook

It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value. By value, I of course men something far broader than mere economic value; I mean value in the philosophical sense.

Perhaps the most serious obstacle impeding the evolution of a land ethic is the fact that our educational and economic system is headed away from, rather than toward, an intense consciousness of land. Your true modern is separated from the land by many middlemen, and by innumerable physical gadgets. He has no vital relation to it; to him it is the space between cities on which crops grow. Turn him loose for a day on the land, and if the spot does not happen to be a golf links or a 'scenic' area, he is bored stiff. If crops could be raised by hydroponics instead of farming, it would suit him very well. Synthetic substitutes for wood, leather, wool, and other natural land products suit him better than the originals. In short, land is something he has 'outgrown.'

Almost equally serious as an obstacle to a land ethic is the attitude of the farmer for whom the land is still an adversary, or a taskmaster that keeps him in slavery. Theoretically, the mechanization of farming ought to cut the farmer's chains, but whether it really does is debatable.

One of the requisites for an ecological comprehension of land is an understanding of ecology, and this is by no means co-extensive with 'education'; in fact, much higher education seems deliberately to avoid ecological concepts. An understanding of ecology does not necessarily originate in courses bearing ecological labels; it is quite as likely to be labeled geography, botany, agronomy, history, or economics. This is as it should be, but whatever the label, ecological training is scarce.

The case for a land ethic would appear hopeless but for the minority which is in obvious revolt against these 'modern' trends.

The 'key-log' which must be moved to release the evolutionary process for an ethic is simply this: quit thinking about decent land-use as solely an economic problem. Examine each question in terms of what is ethically and esthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.

It of course goes without saying that economic feasibility limits the tether of what can or cannot be done for land. It always has and it always will. The fallacy the economic determinists have tied around our collective neck, and which we now need to cast off, is the belief that economics determines all land-use. This is simply not true. An innumerable host of actions and attitudes, comprising perhaps the bulk of all land relations, is deter mined by the land-users' tastes and predilections, rather than by his purse. The bulk of all land relations hinges on investments of time, forethought, skill, and faith rather than on investments of cash. As a land-user thinketh, so is he.

I have purposely presented the land ethic as a product of social evolution because nothing so important as an ethic is ever 'written.' Only the most superficial student of history supposes that Moses 'wrote' the Decalogue; it evolved in the minds of a thinking community, and Moses wrote a tentative summary of it for a 'seminar.' I say tentative because evolution never stops.

The evolution of a land ethic is an intellectual as well as emotional process. Conservation is paved with good intentions which prove to be futile, or even dangerous, because they are devoid of critical understanding either of the land, or of economic land-use. I think it is a truism that as the ethical frontier advances from the individual to the community, its intellectual content increases.

The mechanism of operation is the same for any ethic: social approbation for right actions: social disapproval for wrong actions.

By and large, our present problem is one of attitudes and implements. We are remodeling the Alhambra with a steam-shovel, and we are proud of our yardage. We shall hardly relinquish the shovel, which after all has many good points, but we are in need of gentler and more objective criteria for its successful use.

Wilderness

Wilderness is the raw material out of which man has hammered the artifact called civilization.

Wilderness was never a homogeneous raw material. It was very diverse, and the resulting artifacts are very diverse. These differences in the end-product are known as cultures. The rich diversity of the world's cultures reflects a corresponding diversity in the wilds that gave them birth.

For the first time in the history of the human species, two changes are now impending. One is the exhaustion of wilderness in the more habitable portions of the globe. The other

is the world-wide hybridization of cultures through modern transport and industrialization. Neither can be prevented, and perhaps should not be, but the question arises whether, by some slight amelioration of the impending changes, certain values can be pre-served that would otherwise be lost.

To the laborer in the sweat of his labor, the raw stuff on his anvil is an adversary to be conquered. So was wilderness an adversary to the pioneer.

But to the laborer in repose, able for the moment to cast a philosophical eye on his world, that same raw stuff is something to be loved and cherished, because it gives definition and meaning to his life. This is a plea for the preservation of some tag-ends of wilderness, as museum pieces, for the edification of those who may one day wish to see, feel, or study the origins of their cultural inheritance.

The Remnants

Many of the diverse wildernesses out of which we have hammered America are already gone; hence in any practical program the unit areas to be preserved must vary greatly in size and in degree of wildness.

No living man will see again the long-grass prairie, where a sea of prairie flowers lapped at the stirrups of the pioneer. We shall do well to find a forty here and there on which the prairie plants can be kept alive as species. There were a hundred such plants, many of exceptional beauty. Most of them are quite unknown to those who have inherited their domain.

But the short-grass prairie, where Cabeza de Vaca saw the horizon under the bellies of the buffalo, is still extant in a few spots of 10,000-acre size, albeit severely chewed up by sheep, cattle, and dry-farmers. If the forty-niners are worth commemorating on the walls of state capitols, is not the scene of their mighty hegira worth commemorating in several national prairie reservations?

No living man will see again the virgin pineries of the Lake States, or the flatwoods of the coastal plain, or the giant hardwoods; of these, samples of a few acres each will have to suffice. But there are still several blocks of maple-hemlock of thousand-acre size; there are similar blocks of Appalachian hardwoods, of southern hardwood swamp, of cypress swamp, and of Adirondack spruce. Few of these tag-ends are secure from prospective cuttings, and fewer still from prospective tourist roads.

One of the fastest-shrinking categories of wilderness is coastlines. Cottages and tourist roads have all but annihilated wild coasts on both oceans, and Lake Superior is now losing the last large remnant of wild shoreline on the Great Lakes. No single kind of wilderness is more intimately interwoven with history, and none nearer the point of complete disappearance.

In all of North America east of the Rockies, there is only one large area formally reserved as a wilderness: the Quetico-Superior International Park in Minnesota and Ontario. This magnificent block of canoecountry, a mosaic of lakes and rivers, lies mostly in Canada, and can be about as large as Canada chooses to make it, but its integrity is threatened by two recent developments: the growth of fishing resorts served by pontoon-equipped airplanes, and a jurisdictional dispute whether the Minnesota end of the area shall be all National Forest, or partly State Forest. The whole region is in danger of power impoundments, and this regrettable cleavage among proponents of wilderness may end in giving power the whiphand.

In the rocky Mountain states, a score of areas in the National Forests, varying in size from a hundred thousand to half a million acres, are withdrawn as wilderness, and closed to roads, hotels, and other inimical uses. In the National Parks the same principle is recognized, but no specific boundaries are delimited. Collectively, these federal areas are the backbone of the wilderness program, but they are not so secure as the paper record might lead one to believe. Local pressures for new tourist roads knock off a chip here and a slab there. There is perennial pressure for extension of roads for forest-fire control, and these, by slow degrees, become public highways. Idle CCC camps presented a widespread temptation to build new and often needless roads. Lumber shortages during the war gave the impetus of military necessity to many road extensions, legitimate and otherwise. At the present moment, ski-tows and ski-hotels are being promoted in many mountain areas, often without regard to their prior designation as wilderness.

One of the most insidious invasions of wilderness is via predator control. It works thus: wolves and lions are cleaned out of a wilderness area in the interest of big-game management. The bit-game herds (usually deer or elk) then increase to the point of overbrowsing the range. Hunters must then be encouraged to harvest the surplus, but modern hunters refuse to operate far from a car; hence a road must be built to provide access to the surplus game. Again and again, wilderness areas have been split by this process, but it still continues.

The Rocky Mountain system of wilderness areas covers a wide gamut of forest types, from the juniper breaks of the Southwest to the 'illimitable woods where rolls the Oregon.' It is lacking, however, in desert areas, probably because of that under-aged brand of esthetics which limits the definition of 'scenery' to lakes and pine trees.

In Canada and Alaska there are still large expanses of virgin country
Where nameless men by nameless rivers wander
and in strange valleys die strange deaths alone.

A representative series of these areas can, and should, be kept. Many are of negligible or negative value for economic use. It will be contended, of course, that no deliberate

planning to this end is necessary; that adequate areas will survive anyhow. All recent history belies so comforting an assumption. Even if wild spots do survive, what of their fauna? The woodland caribou, the several races of mountain sheep, the pure form of woods buffalo, the barren ground grizzly, the freshwater seals, and the whales are even now threatened. Of what use are wild areas destitute of their distinctive faunas? There are now organizations and development groups actively embarked on the industrialization of the Arctic wastes, and plans even larger are actively being pressed. The wilderness of the Far North as yet has no formal protection and though still extensive, is beginning to dwindle.

To what extent Canada and Alaska will be able to see and grasp their opportunities is anybody's guess. Pioneers usually scoff at any effort to perpetuate pioneering.

Wilderness for Recreation

Physical combat for the means of subsistence was, for unnumbered centuries, an economic fact. When it disappeared as such, a sound instinct led us to preserve it in the form of athletic sports and games.

Physical combat between men and beasts was, in like manner, an economic fact, now preserved as hunting and fishing for sport.

Public wilderness areas are, first of all, a means of perpetuating, in sport form, the more virile and primitive skills in pioneering travel and subsistence.

Some of these skills are of generalized distribution; the details have been adapted to the American scene, but the skill is world-wide. Hunting, fishing, and foot travel by pack are examples.

Two of them, however, are as American as a hickory tree; they have been copied elsewhere, but they were developed to their full perfection only on this continent. One of these is canoe travel, and the other is travel by pack-train. Both are shrinking rapidly. Your Hudson Bay Indian now has a put-put, and your mountaineer a Ford. If I had to make a living by canoe or packhorse, I should likely do likewise, for both are grueling labor. But we who seek wilderness travel for sport are foiled when we are forced to compete with mechanized substitutes. It is bootless to execute a portage to the tune of motor launches, or to turn out your bell-mare in the pasture of a summer hotel. It is better to stay home.

Wilderness areas are first of all a series of sanctuaries for the primitive arts of wilderness travel, especially canoeing and packing.

I suppose some will wish to debate whether it is important to keep these primitive arts alive. I shall not debate it. Either you know it in your bones, or you are very, very old.

European hunting and fishing are largely devoid of the thing that wilderness areas might be the means of preserving in this country. Europeans do not camp, cook, or do their

own work in the woods if they can avoid doing so. Work chores are delegated to beaters and servants, and a hunt carries the atmosphere of a picnic, rather than of pioneering. The test of skill is confined largely to the actual taking of game or fish.

There are those who decry wilderness sports as 'undemocratic' because the recreational carrying capacity of a wilderness is small, as compared with a golf links or a tourist camp. The basic error in such argument is that it applies the philosophy of massproduction to what is intended to counteract massproduction. The value of recreation is not a matter of ciphers. Recreation is valuable in proportion to the intensity of its experiences, and to the degree to which it differs from and contrasts with workaday life. By these criteria, mechanized outings are at best a milk-and-water affair.

Mechanized recreation already has seized ninetenths of the woods and mountains; a decent respect for minorities should dedicate the other tenth to wilderness.

Wilderness for Science

The most important characteristic of an organism is that capacity for internal self-renewal known as health.

There are two organisms whose processes of selfrenewal have been subjected to human interference and control. One of these is man himself (medicine and public health). The other is land (agriculture and conservation).

The effort to control the health of land has not been very successful. It is now generally understood that when soil loses fertility, or washes away faster than it forms, and when water systems exhibit abnormal floods and shortages, the land is sick.

Other derangements are known as facts, but are not yet thought of as symptoms of land sickness. The disappearance of plants and animal species without visible cause, despite efforts to protect them, and the irruption of others as pests despite efforts to control them, must, in the absence of simpler explanations, be regarded as symptoms of sickness in the land organism. Both are occurring too frequently to be dismissed as normal evolutionaryevents.

The status of thought on these ailments of the land is reflected in the fact that our treatments for them are still prevailingly local. Thus when a soil loses fertility we pour on fertilizer, or at best alter its tame flora and fauna, without considering the fact that its wild flora and fauna, which built the soil to begin with, may likewise be important to its maintenance. It was recently discovered, for example, that good tobacco crops depend, for some unknown reason, on the preconditioning of the soil by wild ragweed. It does not occur to us that such unexpected chains of dependency may have wide prevalence in nature.

When prairie dogs, ground squirrels, or mice increase to pest levels we poison them, but we do not look beyond the animal to find the cause of the irruption. We assume that animal troubles must have animal causes. The latest scientific evidence points to derangements of the plant community as the real seat of rodent irruptions, but few explorations of this clue are being made.

Many forest plantations are producing one-log or two-log trees on soil which originally grew three-log and four-log trees. Why? Thinking foresters know that the cause probably lies not in the tree, but in the micro-flora of the soil, and that it may take more years to restore the soil flora than it took to destroy it.

Many conservation treatments are obviously superficial. Flood-control dams have no relation to the cause of floods. Check dams and terraces do not touch the cause of erosion. Refuges and hatcheries to maintain the supply of game and fish do not explain why the supply fails to maintain itself.

In general, the trend of the evidence indicates that in land, just as in the human body, the symptome may lie in one organ and the cause in another. The practices we now call conservation are, to a large extent, local alleviations of biotic pain. They are necessary, but they must not be confused with cures. The art of land doctoring is being practiced with vigor, but the science of land health is yet to be born.

A science of land health needs, first of all, a base datum of normality, a picture of how healthy land maintains itself as an organism.

We have two available norms. One is found where land physiology remains largely normal despite centuries of human occupation. I know of only one such place; northeastern Europe. It is not likely that we shall fail to study it.

The other and most perfect norm is wilderness. Paleontology offers abundant evidence that wilderness maintained itself for immensely long periods; that its component species were rarely lost, neither did they get out of hand; that weather and water built soil as fast or faster than it was carried away. Wilderness, then, assumes unexpected importance as a laboratory for the study of land-health.

One cannot study the physiology of Montana in the Amazon; each biotic province needs its own wildderness for comparative studies of used and unused land. It is of course too late to salvage more than a lopsided system of wilderness study areas, and most of these remnants are far too small to retain their normality in all respects. Even the National Parks, which run up to a million acres each in size, have not been large enough to retain their natural predators, or to exclude animal diseases carried by livestock. Thus the Yellowstone has lost its wolves and cougars, with the result that elk are ruining the flora, particularly on the winter range. At the same time the grizzly bear and the mountain sheep are shrinking,

the latter by reason of disease.

While even the largest wilderness areas become partially deranged, it required only a few wild acres for J. E. Weaver to discover why the prairie flora is more drouth-resistant than the agronomic flora which has supplanted it. Weaver found that the prairie species practice 'team work' underground by distributing their root-systems to cover all levels, whereas the species comprising the agronomic rotation overdraw one level and neglect another, thus building up cumulative deficits. An important agronomic principle emerged from Weaver's researches.

Again, it requited only a few wild acres for Togrediak to discover why pines on old fields never achieve the size or wind-firmness of pines on uncleared forest soils. In the latter case, the roots follow old root channels, and thus strike deeper.

In many cases we literally do not know how good a performance to expect of healthy land unless we have a wild area for comparison with sick ones. Thus most of the early travelers in the Southwest describe the mountain rivers as originally clear, but a doubt remains, for they may, by accident, have seen them at favorable seasons. Erosion engineers had no base datum until it was discovered that exactly similar rivers in the Sierra Madre of Chihuahua, never grazed or used for fear of Indians, show at their worst a milky hue, not too cloudy for a trout fly. Moss grows to the water's edge on their banks. Most of the corresponding rivers in Arizona and New Mexico are ribbons of boulders, mossless, soil-less, and all but treeless. The preservation and study of the Sierra Madre wilderness by an international experiment station, as a norm for the cure of sick land on both sides of the border, would be a good-neighbor enterprise well worthy of consideration.

In short all available wild areas, large or small, are likely to have value as norms for land science. Recreation is not their only, or even their principal, utility.

Wilderness for Wildlife

The National Parks do not suffice as a means of perpetuating the larger carnivores; witness the precarious status of the grizzly bear, and the fact that the park system is already wolfless. Neither do they suffice for mountain sheep; most sheep herds are shrinking.

The reasons for this are clear in some cases and obscure in others. The parks are certainly too small for such a far-ranging species as the wolf. Many animal species, for reasons unknown, do not seem to thrive as detached islands of population.

The most feasible way to enlarge the area available for wilderness fauna is for the wilder parts of the National Forests, which usually surround the Parks, to function as parks in respect to threatened species. That they have not so functioned is tragically illustrated in the case of the grizzly bear.

In 1909, when I first saw the West, there were grizzlies in every major mountain mass, but you could travel for months without meeting a conservation officer. Today there is some kind of conservation officer 'behind every bush,' yet as wildlife bureaus grow, our most magnificent mammal retreats steadily toward the Canadian border. Of the 6000 grizzlies officially reported as remaining in areas owned by the United States, 5000 are in Alaska. Only five states have any at all. There seems to be a tacit assumption that if grizzlies survive in Canada and Alaska, that is good enough. It is not good enough for me. The Alaskan bears are a distinct species. Relegating grizzlies to Alaska is about like relegating happiness to heaven; one may never get there.

Saving the grizzly requires a series of large areas from which roads and livestock are excluded, or in which livestock damage is compensated. Buying out scattered livestock ranches is the only way to create such areas, but despite large authority to buy and exchange lands, the conservation bureaus have accomplished virtually nothing toward this end. The forest Service has established a grizzly range in Montana, but I know of a mountain range in Utah in which the Forest Service actually promoted a sheep industry, despite the fact that it harbored the sole remnant of grizzlies in that state.

Permanent grizzly ranges and permanent wilderness areas are of course two names for one problem. Enthu-siasm about either requires a long view of conservation, and a historical perspective. Only those able to see the pageant of evolution can be expected to value its theater, the wilderness, or its outstanding achievement, the grizzly. But if education really educates, there will, in time, be more and more citizens who understand that relics of the old West add meaning and value to the new. Youth yet unborn will pole up the Missouri with Lewis and Clark, or climb the Sierras with James Capen Adams, and each generation in turn will ask: Where is the big white bear? It will be a sorry answer to say he went under while conservationists weren't looking.

Defenders of Wilderness

Wilderness is a resource which can shrink but not grow. Invasions can be arrested or modified in a manner to keep an area usable either for recreation, or for science, or for wildlife, but the creation of new wilderness in the full sense of the word is impossible.

It follows, then, that any wilderness program is a rearguard action, through which retreats are reduced to a minimum. The Wilderness Society was organized in 1935 'for the one purpose of saving the wilderness remnants in America.' The Sierra Club is doing yeoman work toward the same end.

It does not suffice, however, to have a few such societies, nor can one be content that congress has enacted a bill aimed at wilderness preservation. Unless there be wilderness-

minded men scattered through all the conservation bureaus, the societies may never learn of new invasions until the time for action has passed. Furthermore, a militant minority of wilderness-minded citizens must be on watch throughout the nation and vigilantly available foraction.

In Europe, where wilderness has now retreated to the Carpathians and Siberia, every thinking conservationist bemoans its loss. Even in Britain, which has less room for land-luxuries than almost any other civilized country, there is a vigorous if belated movement for saving a few small spots of semi-wild land.

Ability to see the cultural value of wilderness boils down, in the last analysis, to a question of intellectual humility. The shallow-minded modern who has lost his rootage in the land assumes that he has already discovered what is important; it is such who prate of empires, political or economic, that will last a thousand years. It is only the scholar who appreciates that all history consists of successive excursions from a single starting-point, to which man returns again and again to organize yet another search for a durable scale of values. It is only the scholar who understands why the raw wilderness gives definition and meaning to the human enterprise.

Conservation Esthetic

Barring love and war, few enterprises are undertaken with such abandon, or by such diverse individuals, or with so paradoxical a mixture of appetite and altruism, as that group of avocations known as outdoor recreation. It is, by common consent, a good thing for people to get back to nature. But wherein lies the goodness, and what can be done to encourage its pursuit? On these questions there is confusion of counsel, and only the most uncritical minds are free from doubt.

Recreation became a problem with a name in the days of the elder Roosevelt, when the railroads which had banished the countryside from the city began to carry city-dwellers, en masse, to the countryside. It began to be noticed that the greater the exodus, the smaller the percapita ration of peace, solitude, wildlife, and scenery, and the longer the migration to reach them.

The automobile has spread this once mild and local predicament to the outermost limits of good roads—it has made scarce in the hinterlands something once abundant on the back forty. But that something must nevertheless be found. Like ions shot from the sun, the week-enders radiate from every town, generating heat and friction as they go. A tourist industry purveys bed and board to bait more ions, faster, further. Advertisements on

rock and rill confide to all and sundry the whereabouts of new retreats, landscapes, hunting-grounds, and fishing-lakes just beyond those recently overrun. Bureaus build roads into new hinterlands, then buy more hinterlands to absorb the exodus accelerated by the roads. A gadget industry pads the bumps against nature-in-the-raw; wood-craft becomes the art of using gadgets. And now, to cap the pyramid of banalities, the trailer. To him who seeks in the woods and mountains only those things obtainable from travel or golf, the present situation is tolerable. But to him who seeks something more, recreation has become a self-destructive process of seeking but never quite finding, a major frustration of mechanized society.

The retreat of the wilderness under the barrage of motorized tourists is no local thing; Hudson Bay, Alaska, Mexico, South Africa are giving way, and South America and Siberia are next. Drums along the Mohawk are now honks along the rivers of the world. Homo sapiens putters no more under his own vine and fig tree; he has poured into his gas tank the stored motivity of countless creatures aspiring through the ages to wiggle their way to pastures new. Antlike he swarms the continents.

This is Outdoor Recreation, Latest Model.

Who now is the recreationist, and what does he seek? A few samples will remind us.

Take a look, first, at any duck marsh. A cordon of parked cars surrounds it. Crouched on each point of its reedy margin is some pillar of society, automatic ready, trigger finger itching to break, if need be, every law of commonwealth or commonweal to kill a duck. That he is already overfed in no way dampens his avidity for gathering his meat from God.

Wandering in the near-by woods is another pillar, hunting rare ferns or new warblers. Because his kind of hunting seldom calls for theft or pillage, he disdains the killer. Yet, like as not, in his youth he was one.

At some near-by resort is still another nature-lover — the kind who writes bad verse on birchbark. Every-where is the unspecialized motorist whose recreation is mileage, who has run the gamut of the National Parks in one summer, and now is headed for Mexico City and points south.

Lastly, there is the professional, striving through countless conservation organizations to give the nature-seeking public what it wants, or to make it want what he has to give.

Why, it may be asked, should such a diversity of folk be bracketed in a single category? Because each, in his own way, is a hunter. And why does each call himself a conservationist? Because the wild things he hunts for have eluded his grasp, and he hopes by some necromancy of laws, appropriations, regional plans, reorganization of departments, or other form of mass-wishing to make them stay put.

Recreation is commonly spoken of as an economic resource. Senate committees tell

us, in reverent ciphers, how many millions the public spends in its pursuit. It has indeed an economic aspect—a cottage on a fishing-lake, or even a duck-point on a marsh, may cost as much as the entire adjacent farm.

It has also an ethical aspect. In the scramble for unspoiled places, codes and decalogues evolve. We hear of 'outdoor manners.' We indoctrinate youth. We print definitions of 'What is a sportsman?' and hang a copy on the wall of whosoever will pay a dollar for the propagation of the faith.

It is clear, though, that these economic and ethical manifestations are results, not causes, of the motive force. We seek contacts with nature because we derive pleasure from them. As in opera, economic machinery is employed to create and maintain facilities. As in opera, professionals make a living out of creating and maintaining them, but it would be false to say of either that the basic motive, the raison dê tre, is economic. The duck-hunter in his blind and the operatic singer on the stage, despite the disparity of their accoutrements, are doing the same thing. Each is reviving, in play, a drama formerly inherent in daily life. Both are, in the last analysis, esthetic exercises.

Public policies for outdoor recreation are controversial. Equally conscientious citizens hold opposite views on what it is and what should be done to conserve its resource-base. Thus the Wilderness Society seeks to exclude roads form the hinterlands, and the Chamber of Commerce to extend them, both in the name of recreation. The game-farmer kills hawks and the bird-lover protects them in the name of shotgun and field-glass hunting respectively. Such factions commonly label each other with short and ugly names, when, in fact, each is consid-ering a different component of the recreational process. These components differ widely in their characteristics or properties. A given policy may be true for one but false for another.

It seems timely, therefore, to segregate the components, and to examine the distinctive characteristics or properties of each.

We begin with the simplest and most obvious: the physical objects that the outdoorsman may seek, find, capture, and carry away. In this category are wild crops such as game and fish, and the symbols or tokens of achievement such as heads, hides, photographs, and specimens.

All these things rest upon the idea of trophy. The pleasure they give is, or should be, in the seeking as well as in the getting. The trophy, whether it be a bird's egg, a mass of trout, a basket of mushrooms, the photograph of a bear, the pressed specimen of a wild flower, or a note tucked into the cairn on a mountain peak, is a certificate. It attests that its owner has been somewhere and done something—that he has exercised skill, persistence, or discrimination in the age-old feat of overcoming, outwitting, or reducing-to-possession.

These connotations which attach to the trophy usually far exceed its physical value.

But trophies differ in their reactions to mass-pursuit. The yield of game and fish can, by means of propagation or management, be increased so as to give each hunter more, or to give more hunters the same amount. During the past decade a profession of wildlife management has sprung into existence. A score of universities teach its techniques, conduct research for bigger and better wild animal crops. However, when carried too far, this stepping-up of yields is subject to a law of diminishing returns. Very intensive management of game or fish lowers the unit value of the trophy by artificializing it.

Consider, for example, a trout raised in hatchery and newly liberated in an over-fished stream. The stream is no longer capable of natural trout production. Pollution has fouled its waters, or deforestation and trampling have warmed or silted them. No one would claim that this trout has the same value as a wholly wild one caught out of some unmanaged stream in the high Rockies. Its esthetic connotations are inferior, even though its capture may require skill. (Its liver, on authority says, is also so degenerated by hatchery feeding as to forebode an early death.) Yet several over-fished states now depend almost entirely on such man-made trout.

All intergrades of artificiality exist, but as massuse increases it tends to push the whole gamut of conservation techniques toward the artificial end, and the whole scale of trophy-values downward.

To safeguard this expensive, artificial, and more or less helpless trout, the Conservation Commission feels impelled to kill all herons and terns visiting the hatchery where it was raised, and all mergansers and otters inhabiting the stream in which it is released. The fisherman perhaps feels no loss in this sacrifice of one kind of wild life for another, but the ornithologist is ready to bite off ten-penny nails. Artificialized management has, in effect, bought fishing at the expense of another and perhaps higher recreation; it has paid dividends to one citizen out of capital stock belonging to all. The same kind of biological wildcatting prevails in game management. In Europe, where wild-crop statistics are available for long periods, we even know the 'rate of exchange' of game for predators. Thus, in Saxony one hawk is killed for each seven game birds bagged, and one predator of some kind for each three head of small game.

Damage to plant life usually follows artificialized management of animals—for example, damage to forests by deer. One may see this in north Germany, in northeast Pennsylvania, in the Kaibab, and in dozens of other less publicized regions. In each case over-abundant deer, when deprived of their natural enemies, have made it impossible for deer food plants to survive or reproduce. Beech, maple, and yew in Europe, ground hemlock and white cedar in the eastern states, mountain mahogany and cliff-rose in the West,

are deer foods threatened by artificialized deer. The composition of the flora, from wild flowers to forest trees, is gradually impoverished, and the deer in turn are dwarfed by malnutrition. There are no stags in the woods today like those whose antlers decorated the walls of feudal castles.

On the English heaths, reproduction of trees is inhibited by rabbits over-protected in the process of cropping partridges and pheasants. On scores of tropical islands both flora and fauna have been destroyed by goats introduced for meat and sport. It would be hard to calculate the mutual injuries by and between mammals deprived of their natural predators, and ranges stripped of their natural food plants. Agricultural crops caught between these upper and nether millstones of ecological mismanagement are saved only at the cost of endless indemnities and barbed wire.

We generalize, then, by saying that mass-use tends to dilute the quality of organic trophies like game and fish, and to induce damage to other resources such as non-game animals, natural vegetation, and farm crops.

The same dilution and damage is not apparent in the yield of 'indirect' trophies, such as photographs. Broadly speaking, a piece of scenery snapped by a dozen tourist cameras daily is not physically impaired thereby, nor does it suffer if photographed a hundred times. The camera industry is one of the few innocuous parasites on wild nature.

We have, then, a basic difference in reaction to mass-use as between two categories of physical objects pursued as trophies.

Let us now consider another component of recreation, which is more subtle and complex: the feeling of isolation in nature. That this is acquiring a scarcityvalue that is very high to some persons is attested by the wilderness controversy. Wilderness areas are by official definition roadless, with roads built only to their edges. They are thus advertised as unique, as indeed they are. But before long trails are congested, there is pressure for access from the air; or an unexpected fire necessitates splitting an area in two with a road to haul fire-fighters. Or the congestion induced by publicity may whip up the price of guides and packers, whereupon somebody discovers that the wilderness policy is undemocratic. Or the local Chamber of Commerce, at first quiescent at the novelty of a hinterland officially labeled as 'wild,' tastes its first blood of tourist money. It then wants more, wilderness or no wilderness. The jeep and the airplane, creatures of the ever mounting pressure from humanity, thus eliminate the opportunity for isolation in nature.

In short, the very scarcity of wild places, reacting with the mores of advertising and promotion, tends to defeat any deliberate effort to prevent their growing still more scarce.

It is clear without further discussion that mass-use involves a direct dilution of the opportunity for solitude; that when we speak of roads, campgrounds, trails, and toilets as

'development' of recreational resources, we speak falsely in respect to this component. Such accommodations for the crowd are not developing (in the sense of adding or creating) anything. On the contrary, they are merely water poured into the already-thin soup.

We now contrast with the isolation-component that very distinct if simple one which we may label 'fresh-air and change of scene.' Mass-use neither destroys nor dilutes this value. The thousandth tourist who clicks the gate to the National Park breathes approximately the same air, and experiences the same contrast with Monday-at-the-office, as does the first. One might even believe that the gregarious assault on the outdoors enhances the contrast. We may say, then, that the fresh-sir and change-of-scene component is like the photographic trophy—it withstands mass-use without damage.

We come now to another component: the perception of the natural processes by which the land and the living things upon it have achieved their characteristic forms (evolution) and by which they maintain their existence (ecology). That thing called 'nature study,' despite the shiver it brings to the spines of the elect, constitutes the first embryonic groping of the mass-mind toward perception.

The outstanding characteristic of perception is that it entails no consumption and no dilution of any resource. The swoop of a hawk, for example, is perceived by one as the drama of evolution. To another it is only a threat to the full frying-pan. The drama may excite a hundred successive witnesses, the threat only one—for he responds with a shotgun.

To promote perception is the only truly creative part of recreational engineering.

This fact is important, and its potential power for bettering 'the good life' only dimly understood. When Daniel Boone first entered into the forests and prairies of 'the dark and bloody ground,' he reduced to his possession the pure essence of 'outdoor America.' He didn't call it that, but what he found is the thing we now seek, and we here deal with things not names.

Recreation, however, is not the outdoors, but our reaction to it. Daniel Boone's reaction depended not only on the quality of what he saw, but on the quality of the mental eye with which he saw it. Ecological science has wrought a change in the mental eye. It has disclosed origins and functions for what to Boone were only facts. It has disclosed mechanisms for what to Boone were only attributes. We have no yardstick to measure this change, but we may safely say that, as compared with the competent ecologist of the present day, Boone saw only the surface of things. The incredible intricacies of the plant and animal community—the intrinsic beauty of the organism called America, then in the full bloom of her maidenhood—were as invisible and incomprehensible to Daniel Boone as they are today to Babbitt. The only true development in American recreational resources is the

development of the perceptive faculty in Americans. All of the other acts we grace by that name are, at best, attempts to retard or mask the process of dilution.

Let no man jump to the conclusion that Babbitt must take his Ph.D. in ecology before he can 'see' his country. On the contrary, the Ph.D may become as callous as an undertaker to the mysteries at which he officiates. Like all real treasures of the mind, perception can be split into infinitely small fractions without losing its quality. The weeds in a city lot convey the same lesson as the redwoods; the farmer may see in his cow-pasture what may not be vouchsafed to the scientist adventuring in the South Seas. Perception, in short, cannot be purchased with either learned degrees or dollars; it grows at home as well as abroad, and he who has a little may use it to as good advantage as he who has much. As a search for perception, the recreational stampede is footless and unnecessary.

There is, lastly, a fifth component: the sense of husbandry. It is unknown to the outdoorsman who works for conservation with his vote rather than with his hands. It is realized only when some art of management is applied to land by some person of perception. That is to say, its enjoyment is reserved for landholders too poor to buy their sport, and land administrators with a sharp eye and an ecological mind. The tourist who buys access to his scenery misses it altogether; so also the sportsman who hires the state, or some underling, to be his gamekeeper. The Government, which essays to substitute public for private operation of recreational lands, is unwittingly giving away to its field officers a large share of what it seeks to offer its citizens. We foresters and game managers might logically pay for, instead of being paid for, our job as husbandmen of wild crops.

That a sense of husbandry exercised in the production of crops may be quite as important as the crops themselves is realized to some extent in agriculture, but not in conservation. American sportsmen hold in small esteem the intensive game-cropping of the Scottish moors and the German forests, and in some respects rightly. But they overlook entirely the sense of husbandry developed by the European landholder in the process of cropping. We have no such thing as yet. It is important. When we conclude that we must bait the farmer with subsidies to induce him to raise a forest, or with gate receipts to induce him to raise game, we are merely admitting that the pleasures of husbandry-in-the-wild are as yet unknown both to the farmer and to ourselves.

Scientists have an epigram: ontogeny repeats phylogeny. What they mean is that the development of each individual repeats the evolutionary history of the race. This is true of mental as well as physical things. The trophy-hunter is the caveman reborn. Trophyhunting is the prerogative of youth, racial or individual, and nothing to apologize for.

The disquieting thing in the modern picture is the trophy-hunter who never grows up, in whom the capacity for isolation, perception, and husbandry is undeveloped, or perhaps

lost. He is the motorized ant who swarms the continents before learning to see his own back yard, who consumes but never creates outdoor satisfactions. For him the recreational engineer dilutes the wilderness and artificializes its trophies in the fond belief that he is rendering a public service.

The trophy-recreationist has peculiarities that contribute in subtle ways to his own undoing. To enjoy he must possess, invade, appropriate. Hence the wilderness that he cannot personally see has no value to him. Hence the universal assumption that an unused hinterland is rendering no service to society. To those devoid of imagination, a blank place on the map is a useless waste; to others, the most valuable part. (Is my share in Alaska worthless to me because I shall never go there? Do I need a road to show me the arctic prairies, the goose pastures of the Yukon, the Kodiak bear, the sheep meadows behind McKinley?)

It would appear, in short, that the rudimentary grades of outdoor recreation consume their resourcebase; the higher grades, at least to a degree, create their own satisfactions with little or no attrition of land or life. It is the expansion of transport without a corresponding growth of perception that threatens us with qualitative bankruptcy of the recreational process. Recreational development is a job not of building roads into lovely country, but of building receptivity into the still unlovely human mind.