Property in Land and Other Resources

Edited by Daniel H. Cole
and Elinor Ostrom

Foreword by Douglass C. North

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Daniel H. Cole *and* Elinor Ostrom

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4

Gold Rushes Are All the Same

Labor Rules the Diggings

ANDREA G. MCDOWELL

In the popular imagination, the California 49er staked his mining claim, and woe betide the man who tried to jump it. The mining claim of myth is the very prototype of private property, combining the natural law principle of finders, keepers and a frontier right to shoot intruders if necessary. In reality, however, miners had very limited rights in their claims, and, by all accounts, miners were remarkably law abiding. From the beginning, claim holders and claim jumpers followed strict rules, and over time, those rules were codified at public meetings. The miners were impressed with their own law abidingness, and so has been almost everyone who has written about the California gold rush.

What were these rules? The earliest claims, those of 1848 and 1849, hardly qualified as property at all; they were barely more than use rights. A miner had about as much interest in his claim as a customer at Starbucks has in the armchair that he has been lucky enough to secure. As long as the customer is sitting in a seat, no one else can take it. He is entitled to get up from "his" chair briefly for a trip to the restroom or to get another cup of coffee if he leaves his coat on the seat and a coffee cup on the table to signal that he is coming back; but if he is gone too long and the place is crowded, someone else will move his coat aside and sit down. The more crowded it is, the sooner this will happen.

Similarly, a miner's right in his claim lasted only as long as he was actively mining. He was granted short absences to get provisions or to do a little prospecting, provided he left his tools on his claim; but if he was gone too long, his claim was deemed abandoned and could be jumped by anyone who did not already have a claim.

The rules in the richest diggings granted a miner little more than the space he and his tools occupied. In the spring and summer of 1848, there do not seem to have been any claims at all; men worked cheek by jowl in the richest diggings. "Every person takes the right to gather all they can, without regard to claims," reported the *Californian* on 3 May 1848. In October of that year, Walter Colton saw a miner strike gold in a hole he was digging for a tent pole. "As soon as it was known, some forty picks were flying into the earth all around the spot," Colton said. "You would have thought the ground had suddenly caved over some human being, who must be instantly

disenhumed or die" (Colton 1850, 291). The discoverer in this case had no exclusive right to his treasure.

Claims emerged in some parts of the diggings before others, but there is no evidence of how or why they did. Perhaps when miners started to dig deeper and therefore stayed on one spot for several days, other miners automatically recognized their exclusive right to their investment. Edward Gould Buffum's observation that in November 1848, at Foster's Bar, "a claim [was] considered good when the claimant had cleared off the top soil from any portion of the bar" suggests that others could not take advantage of his labor (Buffum 1850, 53). In general, early claims took the form of miners' holes, and tools left on the site signified that they were still at work. The first codes standardized claim sizes at roughly the same size as the organic hole, that is, from 10×10 to 15×15 feet (McDowell 2002).

The formal rules, as opposed to the customary ones, also specified how long a miner could be away from his claim before he forfeited it; if he was inactive for three, or five, or more days, depending on the local code, his claim became "jumpable." The work requirement prevented a man from holding onto a claim that he was not using, for example, for purposes of speculation, while giving him time to run errands or do some prospecting without losing his claim (McDowell 2002).

The third feature of most mining codes was the notice requirement. For example, a miner could be required to "stake off" his claim and post a notice with his name and signature, the date of his claim, and its limits. Codes often required miners to register their claims with a local recorder, although this rule seems to have been largely ignored (McDowell 2002). A miner who did not give proper notice could come back from a trip to the merchant to find someone else on his claim.

Finally, many codes limited miners to one claim apiece. This seems to have been the majority rule in the early days and was probably the default rule. The humorous and very popular composition called *The Miner's Ten Commandments* states as the first commandment, "Thou shalt have no other claim than one" (Hutchings 1853).

A miner's limited use right in such a claim was different from any of the textbook forms of "property" in land. It belonged to the first comer, but it was not a speeded-up form of the traditional preemption right or adverse possession, both of which can eventually turn into ownership. The right to mine was also distinct from other rights in the same piece of land. A miner could locate a claim in another person's garden if the garden was on public land and the miner paid the occupant compensation for damages (Bancroft 1890; King 1885; McCurdy 1976; Parkinson 1921). One mining camp, Smith's Flat, had a specific rule allowing a family to hold a claim for gardening purposes, which suggests that bachelors were not allowed to garden on their claims (King 1885). The condition of continuous use and limits on the number of claims a man could hold, even by purchase, also differed in degree from the requirements for other sorts of preemption rights to such an extent that they amounted to a difference in kind. Instead, the mining claim was a codified variant of the mere occupancy that Blackstone imagined to have existed before property: "Thus the ground was in common, and no part of it was the permanent property of any man in particular; yet whoever was in the occupation of any determined spot of it, for rest, for shade, or the like, acquired for the time a sort of ownership from which it would have been unjust, and contrary to the law of nature, to have driven him by

force: but the instant that he quitted the use or occupation of it, another might seize it, without injustice" (Blackstone 1827, Book 2, 2). In other words, before private property, all the world was a Starbucks.

Most of this chapter pertains to the simplest form of mining claim, the small, individual, surface claim. Generally, miners formed partnerships of three or four men to work their respective claims as a team. From the beginning, miners also joined together for large-scale undertakings, such as diverting a stream to get at the gold in the riverbed, working deep shafts, and tunneling into hillsides. Those group projects raised very different issues than individual mining claims. They lasted for longer periods, sometimes years, and required the cooperation of many miners, who organized themselves into joint-stock companies for the purpose. Moreover, whereas individual mining claims merely generated disputes between neighbors, river turning, that is, diverting the river from its bed, led to conflicts among companies upstream and downstream from one another, as well as among companies and individuals mining on the river banks. For these reasons, and because of the amount of money at stake, river turning in particular was not self-regulating like individual mining claims, but generated a great deal of litigation. I shall argue below that roughly similar systems of individual mining claims appear in gold rushes around the world, but there is more regional variation in the organization of large-scale projects.

The individual mining claims, however, are the ones that have fascinated the general public and scholars alike because they seem both simple and exotic. The first in-depth academic study of the claim system was by the economist John Umbeck (1981). Umbeck collected more than two hundred mining codes and compared their rules for individual claims, including claim size and work requirements. He concluded that the rules matched the outcome that would have resulted from fighting over claims. That is, he suggested that miners could spend their time mining or fighting for more land. The optimal claim size would be reached when the benefits of enlarging the claim were outweighed by the loss of time spent actually mining. Being rational actors, the miners agreed to skip the fighting and simply enacted rules reflecting the same result. The claim size in the code was what would have been reached by force of arms. The work requirement stemmed from the need to keep enough men in the diggings to protect one another's claims.

Zerbe and Anderson (2001) listed many problems with Umbeck's mechanical approach. Most important, it does not fit the evidence of what actually happened. There was almost no fighting among Americans over claims, although Americans did use force to expel other ethnic groups. Moreover, Umbeck had little to say about the miners' own accounts of the advantages of the claim system, namely, that it gave everyone an equal chance and prevented a relatively small number of "capitalists" from monopolizing the diggings. A further problem, not noted by Zerbe and Anderson, is that when guns are taken into account, the cost of fighting for more land is not measured in hours and therefore cannot be compared with the value of time spent mining. Without the fighting hypothesis, rational-choice accounts cannot predict what kind of property regime will emerge because many forms of property are equally viable.

Zerbe and Anderson (2001) rejected a purely functional explanation for the emergence of claims. They proposed instead that culture played an important and

perhaps critical role in shaping the claims system because it provided focal points that helped the miners overcome the coordination problems inherent in creating a new property regime from scratch. First, common values supplied a basis for the rules. Zerbe and Anderson reasoned specifically that the claims system expressed both the Lockean labor theory of property and Jacksonian, small-labor ideology. Second, shared institutions, specifically, democratic meetings, enabled the miners to agree on specific laws. Finally, they argued, newcomers to the diggings accepted the codes as legitimate because they shared the basic notions of fairness underlying the codes and accepted the principle of majority rule. In support of their thesis, Zerbe and Anderson drew on the miners' own descriptions of the mining claims system with regard to equality, the rights of labor, and democratic self-government.

McDowell (2002) disagreed with Zerbe and Anderson's thesis and argued that American values alone were not enough to explain the mining-claim system. Fairness and equality are not sufficiently specific to determine a property regime. Eastern property norms were considered fair, although they did not include limits on buying and selling and allowed owners to do as they pleased with their property, including leaving it unused. But the miners chose a system radically different from the private property they had known back in the East. Moreover, in the gold rush, the Jacksonian idea that labor produces wealth and that capital is a mere passive partner in the process was a simple fact. Much of the Jacksonian rhetoric in California was an accurate description of the economics of mining and was not mainly ideological. McDowell suggested that mining claims developed spontaneously in 1848, before any meetings; and that the customary rules of that year acquired normative force and became the baseline for later codes. Later miners almost never gave reasons for the claims system. When they did, they talked about protecting the position that labor had enjoyed in the early gold rush.

Other Gold Rushes

In 2003, at a workshop in Halle, Germany, on mining frontiers, scholars who had studied contemporary gold rushes around the world described claims systems strikingly similar to those in California. The resemblances lie in the inability of individuals to control the mining area and the custom of temporary use rights. This suggests that the California system was not distinctively American.

A gold rush is, of course, a gold discovery that attracts crowds of people hoping to get gold. The geological requirement seems to be that the gold be near the surface and can be extracted with simple and affordable tools. The economic features of a rush are harder to characterize. It certainly is not true that all the miners will get rich. Even at the height of the California gold rush, most miners lost money. The Californians all hoped to get rich, but even that is not true of miners everywhere. In some rushes, like the current gold rush in Mongolia, the people hope merely for enough gold to feed their families that day; they are desperately poor and will endure anything, even police brutality, to scratch out a living from mining (Lim 2009). Elsewhere, in Africa and Brazil, for example, some diggings are more like seedy, adult summer camps than workplaces. The miners come to dig and be with other men and earn some money to spend on drinking, gambling, and prostitution. Indeed,

in some parts of Africa, the gold is considered dangerous or evil and therefore is not to be used for family purposes such as buying land or paying dowries; it is only for frivolities. In short, an area does not have to be extraordinarily rich in gold to spark a gold rush (Werthmann 2008).

Mining claims are found in gold rushes around the world, present and past, from the most spectacular to the most humble, though it is unclear whether they appear in *all* gold rushes. In some cases, including the nineteenth-century gold rushes in Australia and Canada, the claim system was borrowed from California. Not only did the authorities in the British colonies say so explicitly, but many of the miners in Australia and Canada had previously worked in America (Goodman 1994). What is more striking is that variations on the theme of mining claims emerge in third world communities that know nothing about nineteenth-century western mining claims. The only thing that these places have in common is placer gold and, possibly, an irrational, risk-seeking population that is attracted to gold mining. It must therefore be the geological features that determine the property regime.

A number of modern gold rushes, perhaps most, share the following features with California in 1849: The discovery of surface gold, whether on private or public land, attracts hordes of gold seekers who cannot be stopped without 24-hour armed guards. The mining industry (capital), which may have discovered the gold, finds that it must accommodate the miners. A claims system emerges that is based on first possession and use. State laws and authorities are largely ignored; the miners themselves, or a committee of major claim holders or elders, decide disputes, which means that they determine the rules of mining. Finally, there is little violence except among miners of different tribes or ethnicities. The main differences between California and these other gold rushes are that the American miners passed codes, ran their own criminal justice system, and formed joint-stock companies to tackle bigger projects rather than working under a chief or boss. A brief description of gold booms in Africa, South America, and Southeast Asia will illustrate the similarities.

Of the three modern gold rush episodes described in this chapter, the Brazilian experience of the 1980s most closely resembles that in California. It is also particularly well documented by the anthropologist David Cleary (1990), who spent two years among the miners in the period from 1984 to 1986. The similarities to California are due mainly to types of mining that are possible in the Amazon, namely, placer mining with pan, cradle, and sluice box, on one hand, and a form of river mining, on the other hand. The Brazilian rush involved more miners and produced more gold than the California one (MacMillan 1995). Like California, too, Brazil had multiple boom-and-bust mining camps and thus developed an itinerant mining population with its own customs and routines (Cleary 1990). In Cleary's description of the population of the mining camps, there is a clearer division than in California between claim holders (or independent producers) and employees working for wages or on shares, presumably because of the greater use of mechanical pumps and crushers in mining.[1] He also notes, however that the two groups came from the same social class, that most claim holders began as employees, and that a significant number

[1] Gordon MacMillan (1995), another specialist on the Brazilian gold rush, found that almost all income in the diggings he studied was based on a share of the profits, so that mining was a gamble for all involved.

of claim holders failed and lost everything for which they had worked (Cleary 1990). This social mobility, upward and downward, was also characteristic of the California diggings.

In Brazil, as in California, gold either is embedded in quartz or has been brought down from the mountains by water and has come to rest on bedrock, in strata of earth, or even mixed with the topsoil. This last kind of deposit, known as alluvial or placer gold, is worked with the same tools used in California: mining pans, modified rockers called *cobra fumando* (Cleary 1990), and portable wooden sluices. Quartz gold, which gave the Californians great trouble, can now be worked by relatively simple motor-powered crushers and water pumps (Cleary 1990). Such crushers cost thousands of dollars and are difficult to transport because they have to be dismantled and loaded onto mules, but they are within the means of medium- and small-scale miners. Quartz mining and placer mining are carried out in many of the same diggings and together form the modern equivalent of California's dry diggings.

Riverbed mining in Brazil uses technology that was not available in 1849, but the stakes are still high and miners work on shares, as they did in California. The machinery is mounted on a raft. A motor pump attached to a wide, plastic hose is used to suck the alluvium up from the river bottom to the raft, from which it goes through pipes to a large version of the *cobra fumando* (Cleary 1990). The machinery requires a crew of three to operate it: one diver in full diving gear on the riverbed to work the hose, a second man on the raft to monitor the oxygen cylinders and to receive communications from the diver via pulls on a rope, and a third to work the *cobra*. A full team often has two crews to keep the process in continual operation, as well as a cook. The raft and machinery cost from $5,000 to $15,000, depending on quality. The running costs of the operation are also high, especially if fuel and supplies have to be sent in by airplane. Moreover, the work is dangerous, especially for the diver who works in the fast-moving stream with limited visibility; there is a risk that the sides of the hole he is excavating may collapse and bury him, or that logs floating downstream may cut his oxygen supply. This kind of mining can be very profitable, however, and individual miners are willing to take the risk for a share of the profits.

In short, the forms of mining in Brazil are roughly the same as in the California mines. The prospector, with his pan and cradle, pushes forward into the wilderness beyond the reach of roads and supply centers; the placer miners now work both as old-fashioned shovel-and-sluice-box partners and as teams using more advanced, motor-driven technology; and the crews are engaged in high-stakes, possibly highly rewarding, riverbed mining. It is interesting, therefore, to see the similarities to, and some differences from, the California mining-claim system in Brazilian diggings.

Mining conventions in the dry diggings of Brazil can best be described under three headings: establishing claims, disputes over claims, and the virtual impossibility of excluding miners from lucrative gold diggings, even when the diggings are on privately owned land. With respect to riverbed mining, the main point of interest is the internal organization of the crews.

As in California, Brazilian custom gives special privileges to the miner who discovers new diggings. If a prospector makes a rich strike, it attracts other miners,

and if there are further strikes at the site, they set off a true gold rush. The first discoverer cannot grant himself an extra large claim or sell claims to newcomers, but he enjoys the status of *dono da fofoca* (owner of the rush). As *dono*, he marks out and allocates claims on request and in return receives a percentage of their earnings (Cleary 1990). The amount varies, but is usually about 10 percent. The earliest arrivals take claims near the *dono*'s own and honor their obligation to him, but as more and more miners arrive and take claims farther away, the *dono*'s authority becomes attenuated and eventually collapses. The latest newcomers refuse to pay a percentage, and soon everyone stops paying. The former *dono* becomes no more than an ordinary miner. After this, arrivals mark out claims for themselves in unoccupied spots (Cleary 1990).

Claims are small, about five meters by five meters for miners working without machinery and ten meters by ten meters for those with motor-driven pumps and crushers (Cleary 1990). Cleary does not say how such small claims came to be the norm, but he writes that the first discoverer "marks out a [claim], which can be no larger than the area he can realistically exploit, around ten meters by ten meters being the upper limit in most cases" (1990, 60). This is in line with maximum claim sizes in California in 1849. Cleary suggests that a claim holder is liable to forfeit his claim if he is not working it. Specifically, if a private landowner finds gold on his land, he becomes the *dono* and can also collect about 5 percent of earnings from the other miners. But if that landowner tries to reserve some land for himself without actually using it, the miners may simply move in and start mining. This suggests that there is a use requirement for claims, although possibly one that is not as formal as in California.

Once a miner has been assigned a claim by the *dono* or, later in the rush, has staked one off for himself, he has an exclusive right to the claim and may sell it or rent it to another (Cleary 1990). But, again, this is a use right: he may lose his claim if it is not worked.

Brazil does not appear to have a general custom of one claim per person, but at the spectacularly rich site at Serra Pelada in Brazil, Cleary reports that government geologists imposed such a rule with claims distributed by lot. Miners liked the arrangement because it was egalitarian, but it broke down because people found ways to buy and sell claims by letting the original owner retain 1 percent of his claim and keeping his name on the title (Clearly 1990). This was the same problem as in California.

The Brazilian diggings also resemble those in California in that there is very little fighting over claims. "Provided that a claim is in use," Cleary says, "it is very rare for it to be forcibly taken away from its owner, even by a rich and unscrupulous" opponent (1990, 63).[2] In fact, there are hardly any disputes about ownership of claims, violent or otherwise, although boundaries are often contested.

Cleary (1990) suggests two reasons for this, although neither can be verified. One is that someone who took another's claim by force not only would have to do serious

[2] Cleary (1990) does describe one case in which a group threw a miner off his claim, pistol-whipping him and threatening to kill him if he did not leave the diggings. The claim holder, a man of Japanese descent, had made himself unpopular by claiming a large area for himself on the basis of a faked document. Cleary does not say whether this was why he received no support from other miners.

damage to the claim holder and perhaps even kill him, but also would have to deal with the police and with the claim holder's friends and relatives. Second, his rights would not be recognized by others; laborers would not work for him, stores would not give him credit, and his neighbors would not lend him fuel or spare parts. Cleary further notes that new arrivals in the diggings would be particularly ill advised to try to force another off his claim. Newcomers are entering an area where there are already established relationships and personalities and are careful not to cause trouble when they are at their most vulnerable (Cleary 1990, 64). Both arguments could equally well apply to California and could help explain why disputes over claims were almost all between neighbors. More broadly, they are reminders that property is a relation among people and that possession of a claim does not create ownership unless the neighborhood acknowledges this relationship.

Boundary disputes are common in Brazil, however, as they were in California (Cleary 1990). Unfortunately, how they are resolved is unknown. According to Cleary, when the diggings are on private property, the miners recognize the landowner's authority to allocate claims and may ask him to arbitrate a dispute. An ordinary *dono* seldom enjoys this kind of prestige, and some diggings have no *dono* at all. It is not clear who arbitrates disputes in such cases.

Gold discoveries on private land are a Brazilian phenomenon that was unknown in California. Brazilian mining law allows miners to enter private land but requires them to pay 10 percent of their proceeds to the owner (Cleary 1990). A landowner can profit greatly from a gold rush on his property. He is the *dono* who assigns claims, many of which go to his relatives and employees and are effectively under his control. The other miners accept this arrangement, provided there is room for them, too, and the claims are seen to be worked. The landowner also sets up a store, with high markups. Finally, he can collect his 10 percent, although, interestingly, this is usually reduced to 5 percent to make the diggings more attractive to outside miners.

Some owners of land in remote areas where state control is weak, however, do try to run a private or "closed" diggings, and these are "the most violent and unstable" of all mining regions (Cleary 1990, 69). The owner must act quickly to seal the area and has to have enough gunmen to exclude independent miners. "If the attempt to restrict access is contested and the landowner loses, then he loses all legitimacy in the eyes of the [miners] and may even be killed by them" (Cleary 1990, 69). The owner controls his hired labor very tightly. The workers must sell their gold to the landowner and are searched when they leave the diggings to prevent them from smuggling. "Violence, or, more exactly, the threat of violence, becomes an integral part of the relations of production" (Cleary 1990, 71). Eventually, complaints against the landowner may lead the state to move in and take over the land. The Brazilian example suggests that it would have been impossible to privatize mineral land in California, as some members of Congress proposed in 1849.

Even more interestingly, Cleary explains that individual, small-scale mining is in many ways more efficient than industrial scale mining when it comes to placer mines in the Amazon: "It has very low overheads, it does not require more than minimal transport facilities, it is not reliant on a steady power supply, its basics are easily learned by newcomers to the [diggings] within a short time, it is an extremely effective form of gold prospecting, it has expanded both capacity and the range of

deposits that it can work . . . over the last decade, and it is more efficient at extracting gold than it is generally given credit for" (Cleary 1990, 26). Moreover, it is difficult or impossible to transport large machinery to mining areas deep in the forest (Cleary 1990).

The same obstacles to capital investment would have applied in the Sierra Nevada. There, too, surface gold was often discovered deep in the wilderness and quickly worked out, and capital had no more effective equipment to offer than the sluice boxes and flumes that individual miners were already using. Walter Colton wrote of quartz mining, which would require capital investment, "Years must elapse before human enterprise can bridge a path to these mines, or render communication practicable in the rainy season; nor at any period can heavy machinery be transported here without an immense outlay of capital" (1850, 313–314). This is one reason why California capitalists were prepared to wait on the sidelines until the gold rush was over.

As for the limits of private property, landowners in Indonesia have also found it impossible to exclude independent miners. According to a 2001 article in the *Wall Street Journal*, there were 68,000 individuals working for themselves on land owned by mining companies at that time, taking out $250 million annually in gold and other minerals (Schuman 2001). On the island of Sulawesi, officials worried about the environmental impact of this activity, among other things, but were unwilling to act because "we don't want the people to demonstrate against us" (Schuman 2001, A8). Sixty-eight thousand people represent 68,000 votes.

In 1988 the Indonesian government did evict illegal miners from private land with military and police forces and then kept them out by staging "night raids on their camps and posting policemen in the mine full time" (Schuman 2001, A8). Years later, however, the trespassers were back, and the new, democratic government was no longer willing to crack down on them. In January 2001, one company, Aurora Gold, pulled out of Indonesia, taking a $42 million loss. At the time of the *Wall Street Journal*'s article, the miners ruled Aurora's former site and had a 20-man patrol guarding the area where they refined their gold. Again, private owners were no match for thousands of small-scale miners.

Since the early 1990s, West Africa has also experienced multiple gold rushes, which have sparked large labor migrations. Benin and Burkina Faso have been particularly closely studied; the following paragraphs are based on Tilo Grätz's work in Benin (Grätz 2002; see also Werthmann's work on Burkina Faso [2000]). Grätz studied mining near the village of Kwetana in northern Benin. When gold was discovered there in 1993, immigrants flooded in from Benin itself and from neighboring countries. As in California, mineral resources are owned by the state, and private mining is technically illegal. The government accordingly tried to force the miners from the field and confiscated their property, but this did not stop the miners. "At first a cohort of the *gendarmerie* deployed at the site were corrupted" (Grätz 2002, 3), permitting further mining in return for bribes. (Colonel Richard B. Mason in California also feared that his soldiers would desert and mine for themselves if they were stationed near the mines.) When the guards were withdrawn from the gold regions in Benin, many miners simply returned to work.

In 1999, having failed to expel the miners, the government changed its policy to partial legalization. It attempted to impose some rules, such as introducing mining licenses and requiring miners to sell gold to government agents rather than petty traders. The miners disregarded these measures.

The gold near Kwetana is reached by shafts. A shaft belongs to the person who first discovered the site and started exploiting it (called the chief or *patron*), but his rights last only as long as he is actually mining on the site. He has a use right, which lapses if the "chief" abandons his shaft, sells it, or rents it to others for a longer period. If the shaft later turns out to be rich, the original holder cannot reclaim it. Not surprisingly, there are many disputes about ownership rights.

Shafts must be worked in teams, and the hierarchy within these teams is one difference between Benin and California. The discoverer, as the owner, usually directs the work as the team leader and also supplies equipment, food, and medical care. Werthmann (2000) notes that in West African shaft mining, the workers may be paid wages, or the profits may be shared fifty-fifty between the pit owner and the crew. There is no class difference between owners and workers, however, because mining is so unpredictable that their positions can be quickly reversed. The owners may lose their investments and become laborers, while workers may make enough to buy shafts of their own.

Most disputes in the Benin mining camps are about claim boundaries or the rights of an owner who has apparently abandoned his shaft. These are almost always submitted to a gathering of other owners and team leaders. The miners very rarely take their cases to an outside court such as the village head or, even more rarely, government authorities. Moreover, they almost never appeal the arbitrator's decision, and if they do, it is to the village head, not to government agents (Grätz 2002). Grätz suggests that disputes are not pursued in part because miners have other options, such as moving to a new shaft, and because they do not want to waste their limited time on lawsuits.

This form of dispute resolution is reminiscent of that in California, but a difference appears in disputes between the discoverer of a claim who has abandoned it and moved on and a subsequent holder who strikes it rich. The arbitrators generally uphold the latter's rights, as in California, but they may ask him to pay some compensation to the first "explorer." Californians never split the difference between claimants.

Mining in Papua New Guinea is less well documented. In 1987 the mining company CRA Limited discovered fabulously rich placer gold at Mt. Kare on the island. News of the find leaked out in early 1988, and within five months, some eight thousand individuals were working at the site (Vail 1995). The gold was in a remote, uninhabited mountain area, and legal questions about the relative rights of the mining company and the two tribes that claimed use rights in the area created years of litigation; but in the short term, CRA had to write off hundreds of millions of dollars worth of surface gold (Ryan 1991).

Mt. Kare was even more chaotic than other gold rushes because it was so rich and so remote, and the miners had had little or no interaction with the market economy before the discovery of gold. CRA built a health clinic at the site, and there was

a lot of helicopter traffic to and from the mountain, but those were the only signs of the twentieth century. There was no government presence, and the organization of the mines was left entirely up to the miners.

Evidently, the diggings were relatively orderly, but unfortunately, there is no good record of the rules or customs that the miners developed (Ryan 1991). It is known that the miners worked in holes six to ten feet square with crowbars, shovels, and pans. Some holes were much smaller; hardly wide enough for a man or boy to move in and three to four meters deep (Ryan 1991). Although the miners worked with only shovels and pans, not even cradles, they got out well over $100 million worth of gold (Ryan 1991). A number made a fortune, but most made just enough to support themselves, and others found no gold at all. Most of those who got rich squandered their money on sprees and luxury purchases. The cost of living in the mines was extraordinarily high, and transport to and from the mines used up much of the gold that was not spent on food.

Ethnic tensions at Mt. Kare were very like those in California. The two dominant ethnicities in the mines frequently came to blows, and there were two full-fledged battles with bows and arrows. Highlanders from farther away were tolerated as long as they worked holes that had been abandoned by local miners, but if they behaved badly or drew too much attention to themselves, they were moved on. Whites were not permitted to dig at all, although several tried to get a spot (Ryan 1991). A couple of miners tried using motorized pumps for sluicing. They might be compared with the Mexicans who brought their peons to the mines in California, and, like them, they were made to give up this unfair advantage and mine like everyone else (Ryan 1991).

These examples indicate that small, temporary, individual mining claims appear in gold rushes around the world. If the gold is found on private property, the owners find that it is difficult or impossible to stop the influx of miners. If, on the other hand, the strike is on public land, Cleary's research shows that in Brazil, custom grants the first discoverer some rights, but as more people pour into the locale, those rights are ignored. Meanwhile, capital cannot be used to advantage because it cannot control property; and also because heavy machinery is of little use when diggings are remote and no one knows how much gold there is until it is gone. It seems, therefore, that geological conditions, not culture, generate the mining-claim system.

It cannot be asserted that mining claims will emerge in all gold rushes in all circumstances. Very few of the hundreds of gold rushes in the past century have been studied, and the anthropologists who have worked on gold rushes have not focused particularly on property rights. A very different regime operated in ancient Egypt, where gold mining was a royal monopoly. One can also imagine that property rights would be different in a country that recognizes slavery, or in one that lies a in remote region where highly organized, well-armed gangs control the area, as the FARC does in parts of Colombia today (Romero 2011). That a California-like mining-claim system has appeared independently in vastly different societies around the world, however, and across time shows that it is not entirely a product of culture.

Back to California

In California, as in Brazil, the conventions of mining first evolved through interactions between miners and were not created at miners' meetings. By 1849 there was an almost universal expectation that claims would be small and that the rule was "use it or lose it." Where rich diggings were discovered, the crowds of miners arriving at the diggings picked their spots and got to work. The main difference between the American and Brazilian diggings from 1849 onward is that the Americans held meetings to formalize the new rules, whereas in Brazil, the rules remained unwritten. Although the miners said harsh things about capital, it was not the threat of a capitalist take over that roused them to create use rights. Miners and capitalists all agreed that capital was useless in the early stages of a gold rush, if only because wages were so high. Capital did finally step in when the gold rush was over; indeed, the time when individual mining was no longer profitable and expensive equipment was necessary marked the end of the rush.

Again, the subject of this chapter is the archetypical gold rush in which there is a lot of gold near the surface that individuals can reach with simple tools. Californians developed many other forms of mining to get at gold that was less accessible. As mentioned earlier, the 1850s mining operations included also river turning projects, deep-shaft mining, failed attempts at quartz mining, water companies, and enormous claims still worked by individual miners but now dependent on the water companies. The basic idea of the mining claim was carried forward through all these developments, but the spontaneous, self-enforcing, possibly even universal rules for whose existence this chapter argues are associated with very rich surface diggings.

The classic, individual claim had a relatively short history. Historians who have attempted to identify the end of the gold rush, that is, of the heyday of the independent miner, have put it in 1851 or 1852 (Clay and Wright 2005; Owens 2005; Paul 1947). Contemporaries began announcing its demise from 1850, as did the *Alta California* on 15 February 1851: "The man who lives upon his labor from day to day, must hereafter be employed by the man who has in his possession accumulated labor, or money, the representative of labor."

What makes it difficult to pinpoint the end of the gold rush is that miners continued to work individual claims for more than two decades. Amendments to local codes were still being enacted as late as 1878, long after any kind of rush (King 1885). After 1855 claims were huge; by 1857 some codes provided for claims as large as one hundred "yards square," or ten thousand square yards, and the cost of water was so high that many of those claims were not worth working (King 1885; Turrill 1876). At this point, mining was just a job, and not even a good job. These huge, almost worthless claims are not the subject of this chapter. For present purposes, 1852 is considered the last year of the rush, even though there were further mini-rushes in following years. As Clay and Wright (2005) note, a weakness of Umbeck's analysis as that two-thirds of the codes on which he based it were drafted after the gold rush proper.

The first appearance of claims is not documented. They did not appear everywhere at the same time, but were in use in some areas long before others. In 1848 there were only a few thousand men at work in the diggings, with almost no experience

and only very primitive tools, and there were no general rules. Some miners were always on the move and probably did not think in terms of property. Miner William Jackson Barry, for instance, "mined" by "pulling up grass and shaking the earth from the roots into a pan, and then washing it off in the creek" (Barry 1879, 102). In some places, a miner did not have an exclusive right even to the spot where he was actively at work, that is, to the two or three yards occupied by his body and tools. Walter Colton observed this repeatedly, for instance, in the previously mentioned case of the miner who struck gold in the hole he was digging for a tent pole. Only a few days earlier, Colton saw or heard of a Mexican who had made a very rich find: "As soon as this was known, four of the New York volunteers struck in each side of the Sonorian, and dug him out" (1850, 287). (The Mexican at least had the satisfaction of seeing that they did not find any gold where he had been digging.) Many years after the gold rush, a former miner told the historian Charles Howard Shinn that when he began mining, there was not yet even a custom, "so that a man hardly objected to your digging close beside him so long as you gave him room to swing a pick" (1885, 166). In short, there were areas in the diggings with no property rights at all.

Elsewhere in the mines, however, someone who struck gold had at least a minimal right to his location. On their last day in the mines before leaving for Salt Lake City, Mormon Robert Petch and his partner Douglas "opened a hole" from which they got $398. They then sold the right to the hole for $150 (Owens 2005, 249). This hole must have been rather small, given that it was dug, worked, and sold in the course of one day. On 9 July 1848, about the same time that Robert Petch sold his hole, Charles Bolivar Sterling "bought a rich prospect from a Mormon," perhaps even the same one (Larkin 1960, 312). Bolivar Sterling and his partner got two to three ounces ($32 to $48) from their new "prospect" in part of an afternoon.

Meanwhile, during that same year, the custom emerged that a miner had a claim in his hole that would be respected as long as he left his tools in it to signal that he was still at work (McDowell 2002). Many miners referred to it in later years as a sort of default rule that held even in the wilderness where there was no community to enforce it. Bayard Taylor, for example, wrote that in 1849 "a man might dig a hole in the dry ravines, and so long as he left a shovel, pick, or crowbar to show that he still intended working it, he was safe from trespass" (Taylor 1850, 101). Taylor added that "his tools might remain there for months without being disturbed," but he may have been referring to the sanctity of the tools, not the claim (Taylor 1850, 101–102). There is no evidence about how long tools would hold a claim that was not being worked, but presumably it depended on how rich the diggings were and how many miners were eager to get claims there.

No source explains how this custom came about. That the claim was a hole suggests that it honored the miner's investment of labor. In some places, a hole would not pay until one got 12 feet down, and surely human nature, or even animal nature, would not accept a general rule that another party could jump in at that late point and take over.

Miners' meetings and rectangular, marked-out claims are first documented in 1849. The only description of an intermediate step between holes and square claims gives the impression that the transition was natural and unplanned: "As a general

rule, it is a practice among the miners to leave each digger a sufficient space for a hole, upon which nobody has a right to encroach; from four to ten feet they allow among themselves to be sufficient for each, according as they may be more or less numerous and as digging may be more or less rich. A tool left in the hole in which a miner is working is a sign that it is not abandoned yet, and that nobody has a right to intrude there, and this regulation, which is adopted by silent consent of all, is generally complied with" (Wierzbicki 1933, 57). This passage suggests that all the essentials of a mining code were in place before actual miners' meetings and publications of miners' thoughts about the advantages of mining claims.

From the very beginning, the reversal of the usual power relationship between capital and labor was one of the wonders of the gold rush. William Thurston asserted that "labour has obtained the upper hand of capital, or rather, has become capital itself" (1849, 35); the *Californian* proclaimed on 14 August 1848 that the laboring class have now become the capitalists of the country. These two publications hoped to encourage emigration to California; their readers clearly believed that in the East, capital dominated labor, and that was a bad thing. But when they said that labor had the upper hand, they did not mean that labor made the rules to suit itself; they meant that as a matter of fact, only labor could generate wealth in the mines. Moreover, wages in the mines pulled up wages across the board. "The mechanic and artisan fixes his own price, and the capitalist is compelled from *necessity* to submit to that price, whatever it may be," James Collier, the newly arrived collector of customs, wrote on 13 November 1849 (1849, 30–31). As a result, equality simply happened. "We have no hired labourers—no servants; every man must black his own boots . . . This is a practical democracy—no theory—no talking about equality" (Thurston 1849, 40). Because the gold in California was distributed as it was, capital simply could not be used to advantage.

The capitalists, or those who thought like capitalists, realized from the very beginning that they could not get rich by using their money and other men's physical labor, at least not yet. "While gold can be found lying within a few inches of the earth's surface, and the only capital required to extract it consists in the capability to purchase a pick and a shovel, there is no need of combination; but when the hills are to be torn to their very bases . . . individuals must retire from the field, and make room for combined efforts" (Buffum 1850, 107). Similarly, Wierzbicki stated: "When this gold mania ceases to rage, individuals will abandon the mines; and then there will be a good opportunity for companies with heavy capital to step in" (1933, 34).[3]

That was exactly what happened. Thanks to technological innovations and cheap labor in the late 1850s, quartz mining and hydraulic mining became profitable. The few miners who were left were no longer able to support themselves on their own claims and had to hire themselves out to capital (Paul 1947). But by then, the men of the gold rush had taken their earnings or accepted their losses and moved on.

Calls for the sale of mineral lands came not from capitalists but from U.S. senators who understood nothing of all this. Presidents Polk (1845–1849) and Taylor (1849–1850) recommended dividing the gold-rich area into small parcels and leasing

[3] These words first appeared in *Alta California*, steamer edition, 31 August 1849, in a letter signed F. P. W. (Felix Paul Wierzbicki).

or selling them to miners (Ellison 1926; Yale 1867). A bill was duly debated in the U.S. Senate proposing the sale of mineral lands in California in lots not less than two acres each and at a minimum of $1.25 per acre (*Alta California*, 6 September 1849). Among the opponents to this ridiculous idea was Thomas Hart Benton, who argued that fee outright ownership of mineral land claims was unworkable. Because the gold was distributed irregularly, he argued, mining was more like hunting than like agriculture or any other steady industry. "For this purpose, it is not fee-simples in two acres that are wanted, but permits to hunt, and protection in the discovery when a deposit is found" (*Congressional Globe* 30th Congress, 2nd Session, 1849, 257).

A year later, the Senate debated another possible approach to the mineral lands in the form of a "bill for the temporary provision for the working and discovery of Gold Mines and Placers in California and for preserving order in the gold mine districts" (*Congressional Globe, Appendix* 31st Congress, 1st Session, 1850, 1362). The new proposal was to issue permits for mining at $1 per month, and to allow each miner to hold 30-feet square while he worked it in good faith. Selling the mining region was no longer an option; several senators stressed that they were against sale because if the land could be sold, "the poor will sell and the rich will buy; and by-and-by the necessary consequence will be, that the gold lands will be monopolized by a few persons" (*Congressional Globe, Appendix* 1850, 1371). At any rate, it looked that way from Washington.

The talk about selling mineral land alarmed some miners. Samuel McNeil, for instance, who was in the mines in 1849, said, "I shall blame Uncle Sam . . . if he is too hasty in selling the California gold lands in lots to speculators . . . that they may place it beyond the reach of our poorer classes, who, as true republicans, should have the full advantage of a republican government" (1957 [1850], 4). But the government never tried to introduce fee simple in mineral land, and even the idea of a $1 per month permit was never realized.

The California miners did not have to worry about big capital taking over the mines, and most of them did not worry about it. Fear of capital was not the reason for the claims system, which, in any case, evolved before the first miners' meetings took place. As in gold rushes around the world, capital had to wait for investment opportunities.

Variations on and Evasions of the Rules

It would be very difficult either to prove or to disprove that the mining-claim system was inevitable. One can, however, look at how much the rules varied from camp to camp and at attempts to evade or subvert the rules to see whether they ever resulted in a different form of property. It turns out that they did not.

First, none of the later diggings chose to adopt fee simple instead of claims. The codes enacted from 1849 to govern individual claims simply spelled out what custom had left hazy. Fifteen-by-fifteen-foot claims replaced holes; fixed work requirements replaced a vague good-faith standard; and stakes showing claim boundaries, or even registering the claim with a recorder, replaced tools left in a hole. The exact details varied from camp to camp, but the basic idea was the same.

Second, individuals or groups in California never managed to control a large area as a private domain. A few groups did attempt to dominate diggings by declaration or by assigning themselves very large claims, or by telling newcomers that all claims in the area were taken and they would have to move along (McDowell 2002; Shinn 1973 [1884]). In the early years, at least such attempts did not succeed for long.

There is one huge exception to the general rule that a group cannot control a particular diggings, namely, that one ethnic group frequently denies access to members of other ethnic groups, both in California and around the world. Not only did Americans collectively drive Indians, Spanish speakers, and Chinese from the mines, but individual American miners stole claims held by members of those ethnicities (Bancroft 1890; Hurtado 1988; Kanazawa 2005). Except for that aberration, however, the mines remained open to all.

There was one significant variation among codes where ideology could make a difference, namely that some codes restricted miners to only one claim at a time while others allowed them to purchase multiple claims on condition that they hire someone to meet the work requirements. The older and possibly default rule was one claim per person, as mentioned earlier, but many codes permitted a miner one claim by "location," that is, by staking off a regulation-sized bit of unclaimed land, and as many as he wanted by purchase (McDowell 2002, 34 n. 113). (To have let a miner hold multiple claims by location would have defeated the principle of limited claim size because the first miner on the scene of a new diggings could have "located" the whole area).

On the very few occasions on which miners who favored the one-claim rule explained their objection to the accumulation of claims, the reason was that it led to inequality. In 1852 the Miners and Settlers of Spring Valley urged the mining community "not to sanction the making of any new claims by men who already have enough," lest a mining aristocracy arise among them (Goodman 1994, 55–56). On a jocular note, Pringle Shaw wrote that he and his partner decided to jump a claim held by a man who "was well known to hold three or four claims in the same district." They were fairly confident that they would be able to keep the claim because "miners and mining laws are in most instances in radical opposition to all monopoly" (Shaw 1857, 132–133). In 1853 James H. Carson published a "Letter to the Miners of California" in the *Alta California*. He wrote that in the great majority of camps, the old rules of 1848, 1849, and 1850 had been replaced by regulations allowing miners to buy as many claims as they wanted. In those camps, Carson said, "New miners . . . find the ground all claimed, and they have no chance for a share" and "are forced to *hire out* for what they can get" (Carson 1853, 1). Even diggings with a one claim limit could be full, of course, but this was more likely to happen if existing miners could hold multiple claims.

Another problem with codes that let miners buy multiple claims, besides resentment against men who built up large holdings, was that a group of miners could use sham sales among themselves to circumvent the rule allowing only one claim by location. The Warren Hill code addressed this issue by stipulating that a purchaser had to "take a bill of sale, showing . . . the cost thereof attested by one or more witnesses," and that payment for the claim had to be "given in good faith and without collusion between the parties" (King 1885, 279–280).

It may have been abuses like this that led at least two diggings to change their rule to one claim per miner. In the summer of 1850, the miners at Murphy's Diggings voted "that from and after this date no person shall hold more than one claim" (Mining News, *Sonora Herald*, August 10, 1850, at 2). Presumably this meant that miners with several claims had to pick which one they wanted to keep, because the *Sonora Herald* advised miners who had claims at Murphy's to get back there if they did not want their claims to be jumped. Similarly, the first resolution of the 19 June 1850 code passed at Weaver Creek was that "[e]ach and every miner shall be entitled to hold one claim at a time and no more, either by purchase or otherwise from this time forth" (King 1885, 277).

Clearly, there was an ideological or principled difference between the one-claim rule and rules allowing multiple claims. In practice, however, the two regimes blurred into one another. Most importantly, the complexity of mining arrangements compromised the one-claim rule. In the worst case, a company of miners would take out extra claims in the names of fictitious "members." The codes allowed them to meet the work requirements for their individual claims by digging on one at a time, and if they were asked, they could always claim that the extra "members" were off running errands or whatever. The Warren Hill code also addressed this problem: "Whenever a company of miners take up or purchase claims and onely [*sic*] a part of said Company go before the Recorder. He may record the claim for the party present but shall refuse to record the claim of the absent party, unless the party present make affidavit of the existence of said partnership, which affidavit shall be taken by the recorder and made a matter of record" (King 1885, 280).

Then again, much of the rule bending was more benign and even necessary for miners who were short on cash and were happy to work for wages. In diggings where miners could buy multiple claims, an employer would offer work on one of his properties. If the local rules limited the employer to one claim, however, the same arrangement could be achieved by buying a second claim in the worker's name. One might think that the worker could take advantage and declare himself the owner (jump the claim he was working on), but according to Dame Shirley, that seldom, if ever, happened. "The person who is willing to be hired generally prefers to receive the six dollars per diem, of which he is *sure* in any case, to running the risk of a claim not proving valuable." And, in any case, "the holding of claims by proxy is considered rather as a carrying out of the spirit of the law than as an evasion of it" (Shirley 1922, 213).

Miners also got financial stakes in multiple claims through complicated buying and selling transactions. A claimholder selling to a buyer short on cash, for instance, might accept payment in installments from his earnings (Decker 1966). Alexander Barrington sold a rich claim at Shirt-Tale Hill for two-thirds of the future profits, a deal that would amount to rack-rent but for the fact that Barrington could probably have made a small fortune on a straight sale (McDowell 2002). Someone who made a number of such arrangements might in effect have shares in claims across the diggings without necessarily holding even one in his own name. The rules of Shirt-Tale Hill, which are not preserved, may have allowed such arrangements; but miners could very well have gotten away with them in one-claim diggings as well. In short, even when miners were officially limited to one claim each, some actually held interests in multiple claims.

At the same time, diggings that allowed miners to accumulate claims were not actually monopolized. No one had the money to buy up an entire mining district, and if he had, he would have lost it quickly because mining was a gamble. The difficulty of excluding other miners even from privately owned land in a modern state like Brazil suggests how powerful the claims system is.

In sum, the claim system not only reappeared in every new diggings, but also was largely resistant to cheating or manipulation. Although the bright-line rules of the codes were blurred in real life, only the one-claim rule was significantly eroded. That the system was so stable even though the rules were unofficial and there was no government suggests that there was no viable alternative to the claim system. American culture and values had little to do with it.

The argument of this chapter has been that the gold rush phenomenon is precultural or acultural: the same mining claim system has recurred around the world. In describing the California gold rush, Americans naturally used their own language, speaking in terms of the labor theory of value and a Jacksonian hostility to capitalists and speculators, but this was descriptive rather than normative.

There are both arcadian and nightmarish fairy tales of what the world would be like without private property. Gold rushes around the world have something of both. The California miners focused on the advantages of the mining claim system, where miners settle only in spots that are not already occupied, do not try to control more than they can use, and respect one another's claims during brief absences. Capitalists were more aware of the negative effects of individual, small scale mining: the wastefulness of working and reworking dirt, sometimes three times, over the course of the gold rush; the high wages that raised the cost of every enterprise; and the constantly changing population, consisting mainly of young men who had no intention of staying in the state. Both miners and capitalists realized, however, that temporary use rights would continue until the gold rush had run its course. When it was over, as Thomas Hart Benton said, "the sober industry will begin which enriches and ennobles a nation" (*Daily Alta California,* 6 September 1849, 2).

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