

TRANSFORMATIONS IN IBALOI GOLD EXTRACTION FROM THE PROTOHISTORIC PERIOD TO THE CURRENT ERA (14th c. - 20th c.)

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Ethnohistorical and oral tradition sources suggest that the Ibaloi of Southwestern Cordillera have mined gold in the highly mineralized Baguio-Benguet Gold District from as early as the 14th c. (Philippine protohistoric period) up to the 18th c. (middle Spanish Contact period). Far from the commercialist dictum of mining as a profit-oriented enterprise large in scale, and destructive of the environment, the sustainable traditional mining methods of the Ibaloi, keeping the activity small-scale and family-centered, manifest their deep reverence of their "earth purses". The paper will trace the socio-economic transformations in Ibaloi society as they negotiated the Spanish and American contact period. To protect their *Balitok* (gold) from colonial interests, the Ibaloi shifted to cattle herding, then to terraced agriculture in order to become more self-sufficient and less reliant on lowland trade. Ultimately their disenfranchisement from the mines came as American prospectors who were led by Kankanaey guides entered the scene in the early 20th c.

The highland Ibaloi gold miners extracted gold only to barter for provisions at the coastal maritime trading centers of Northwestern Luzon. They did not really cultivate an enterprising spirit in using this rare yellow metal to enrich themselves. They did not desire more than what was necessary. But this was misinterpreted by the Spanish chroniclers as laziness. Sustainable/non-intensive gold extraction may have safeguarded their gold-god *balitok*¹ from

¹ Gold for the Ibaloi is owned by the gold god Balitok who used to share this resource freely and abundantly with man. Later on, according to the oral traditions from Tublay, Mankayan, Kabayan, Itogon, and Tuba, Balitok became angry with the greed and abuse of man over this free-flowing gold resulting to his scattering of the gold deposits all over Benguet in inaccessible crevices underneath the ground (Bagamaspad & Hamada-Pawid 1981:68).

exposure to the Spanish colonizers; the Ibaloi may have foreseen rightly that foreign ventures would lead to wanton exploitation and subsequent depletion of this precious life-resource. A socio-economic shift putting emphasis on cattle herding and terraced agriculture instead of just gold mining may have also served to protect their "earth purses". According to Miguel Lopez de Legaspi (1565) the natives of the islands get from the earth the gold they need at the very day they need it, as if the earth was a "purse" (Tenrengren 1963:558-559). The early Ibaloi gold-mining methods were never destructive of the environment, relying on simple and eco-friendly methods. This paper will present these non-destructive gold extraction, processing, and working techniques as revealed in accidental and intentional ethnographies made by explorers, priests, prospectors, and others during the Spanish (16th to 19th c.) and American (20th c.) contact periods, and in Ibaloi oral tradition (stretching back to as early as 14th c.) that were recorded by A. Bagamaspad and B. Hamada-Pawid in the early 1980s. The paper will highlight the simplicity and ingenuity in technique that characterizes the Ibaloi traditional gold miner's method.

The Antiquity of Ibaloi Gold Mining (14th c. or earlier)

Tenrengren says that mining in the Philippines "must have been carried on for a long period prior to the arrival of the Spaniards" (1963:555), based on the four- to seven-meter-deep vertical shaft gold mines in Paracale district in Southern Luzon that were seen by Juan de Salcedo, the first Spaniard to enter the area. Perez in 1902 mentioned the presence of abandoned excavations in Suyoc, Benguet, which indicate that mining had been done for a long time. According to Robertson, the Ibaloi have been mining for centuries (1914). Becker (1901) claims that gold coming from Luzon appears in the Chinese records from as early as the third century AD, this is echoed by Pangasinan historian del Castillo (1986, quoting Dr. Austin Craig).

Gold was present in earliest remembered times in Ibaloi society. In fact it has been said that gold mining was the main attraction for the early peopling of the Benguet Mountains (Keesing 1962). Quirino and Garcia (1958) also note that the Quirante expedition in 1624 highlights the great antiquity of Ibaloi gold mining. Systematic archaeological surveys conducted in Chuyo, one of the earliest Ibaloi settlements based on oral traditions, has also revealed a 14th c. earliest possible date for mining based on a Ming dynasty tradeware sherd found there (Canilao 2009).

Ibaloi genealogical reckoning stretches back to thirteen generations with the oldest recalled first generation ancestors pegged in the 14th century. Oral tradition respondents in the Benguet History Project of the 1980s further state

that the first Ibaloi migration from Pangasinan to Benguet occurred in the 1300s Bagamaspad & Hamada-Pawid 1985: 37- 38. Many sources say that the Ibaloi people are cousins to the lowland Pangasinense (Prill-Brett-Salinas-Ramos 1998, Himes 1998, Bagamaspad & Hamada-Pawid 1985, Cariño 1985, Scott 1984, Keesing 1962). They may have given up their warm and comfortable abodes in lowland Pangasinan in exchange for harsher living conditions in the Benguet Mountains as they forded up the main river systems in Northwest Luzon in search for gold. The first settlements in the present day Benguet area were eventually established in gold mining areas. Such early settlements were established in the 14th c.

A Centuries-Old Gold Trade

From the early beginnings of gold mining in the 14th c. up to the Spanish period, gold was brought down to the lowlands to be exchanged for desired goods. Dela Vega (1609) makes a description of this livelihood of the *Ygolottes* (Ibaloi),

For there, many centuries, the greatest quantity of gold... of the finest quality... has been and still obtained by them and at present time the industry is as active as ever... most of it 22 carats, for almost daily these Ygolottes go to a village of the province of Pangasinan, as to an emporium, to buy provisions in exchange (dela Vega 1609:281).

This trade, which centered on the 'Northwestern Luzon Riverine Exchange Network', was integral to the early lifeways of the people. Aside from watering the plains, rivers such as the Agno, Bauang-Naguilian, and Angalacan, also provided gold particles and served as the important passage for people, goods, and ideas upstream (Keesing 1962:48-49, 304).

Trading was one of the main preoccupations of the Ibaloi in the early 14th century. The highland Ibaloi traded gold with the lowland Pangasinense and Ilocano in exchange for *bagoong* (fish or shrimp paste), wax, honey, rice, salt, pigs, cows, carabaos, blankets, mats, *abels* (Ilocano cloth), ceramics, and semi-precious beads (Prill- Brett and Ramos 1998, Scott 1992, Bagamaspad & Hamada-Pawid 1985). Interestingly, Carillo (1756) says that the great volume of Indian carnelian found in the Philippine islands is testament to the amount of gold that left the islands as exports in exchange. The ancient villages of Agoo, Lingayen, Aringay, San Fernando, and current-day Santo Tomas, La Union were the eventual destinations of the Benguet gold (Keesing 1962).

On the pre-Spanish period trading relations between the Philippines and the rest of South East Asia, Tenrengren concludes that the "trade with China, Borneo, and Japan had been going on for centuries, and ever since the production of gold started, this trade has resulted in the constant outflow of the yellow metal" (1963:558).

The annals of the Chinese Sung (960-1278) and Yuan (1260-1368) dynasties give accounts of trading relations with the Philippines (Scott 1984). They shows that the earliest tribute mission from Luzon sent to China was in 1373AD. There are also mentions of Pangasinan and Lingayen in the Chinese early records. Lingayen was called *Li-yin-tung* and appeared as a port of call in the book of sailing directions made by Chang Hsieh called *Tung Hsi Yang K'ao* ('Eastern and Western Sea Pilot', 1618). Tribute missions coming from Pangasinan were also noted in the records of Ming dynasty:

Pangasinan (Feng-chia-hsi-lan) appeared five times during the next five years: Chieftain Kamayin on 23 September 1406 for example and Chieftains Taymey (tortoise shell) and Liyu in 1408 and 1409 and on 11 December 1411 the Emperor tendered the Pangasinan party a state banquet. (Scott 1984:75)

According to Reid (1999), Philippine locations especially in Luzon started to appear in Chinese annals as a result of the contact between Luzon and Southern China. Several tribute missions to the eastern coast of the Philippines from 1372 to 1427 were also commissioned by China. Champa at this time had also a well-established trading relation with the Philippine Islands and Reid delineates the periods when the trading relations were at full blossom:

There were... close commercial connections between Philippine ports and those of the Cham coast in the 11th to 12th centuries, and again between about 1450 and 1567 when the direct China-Philippine eastern route was permanently established (1999:48).

Funan is another polity which had established trading relations with the Philippine Islands. Miksic (2011) believes that Funan may have imported gold from the Philippines. Filipino merchants and mariners were already spread all over Southeast Asia long before European contact. There were even Filipinos in Melaka when the Portuguese ships arrived in 1511 (Reid 1999).

Tom Pires in his *Travel Accounts of the Islands, 1513-1787* mentions the trading relationship between Luzon and Malaysia/Indonesia (1971), "The Borneans go to the lands of the Lucoes [Luzon] to buy gold and foodstuffs as

well", adding that the gold that they bring to Malacca from Luzon and from the surrounding islands "are countless" (16th c.) (Pires, et. al. 1971:1). Pires' account is not surprising given that Philippine gold is observed to be "more splendid, (a product) of a vigorous gold-smithing tradition in the pre Hispanic Philippines when compared to Borneo" (Tom Harrison quoted by Pattane 1977). Carillo (1756) also says that much of the gold that goes to the Malacca emporium came from the island of Lequios (Luzon).

Traditional and Sustainable Gold Extraction

The Ibaloi are the primary custodians of the Baguio Gold District. Philippine gold literature routinely praises this group as highly skilled in the working of gold (see Villegas 2004, Lopez 1992, Tenrengren 1963, Wilson 1932, Becker 1901). Socialization and enculturation into a gold-oriented way of life takes place early in an Ibaloi's childhood. At a tender age an Ibaloi learns to weigh gold "with the greatest skill and delicacy that has ever been seen," according to an unsigned entry in the Relation of the Philippine Islands. "The first thing they teach their children is the knowledge of gold and the weights by which they weigh it, for there is no other money around them. ('unsigned' 1586:376-391). They also develop basic (ocular) skills in gold identification such that they can "even recognize whence the gold comes as soon as they see it, and they say that this gold from such an island and this other gold from such another" (de Rada 1574:286)

The native's proficiency in the jeweler's art, weighing and appraising of gold, and in some case even adulteration of gold impressed the Spaniards (Tenrengren 1963).

The earliest ethnographic-historical account of Ibaloi gold collection methods was written by the Spanish conquistador Captain Quirante. In his *Expedition to the Mines of the Igorrotes* in 1624. He noted how in the rainy season, "that wretched race, most of whom are miners, unite with their wives and children to wash the sand of the streamlets that flow from the mountains" (Quirante 1624:276). This particular quote highlights the family-centered, communal, small-scale gold working of the Ibaloi for whom gold extraction is a community-based activity. According to Lopez (1992), members of families mined as a group with each receiving their fair share and only the headman getting a slightly larger amount for supervision. Perez in his ethnography of the Suyoc mines (north of Benguet) says that excavated gold mines were owned by families and were passed on as inheritance (1902:127). There is even a gender division of labor among the Ibaloi (which will be outlined below in the accounts of Ibaloi milling process).

According to Quirante (1624), Ibaloi digging tools were stakes fashioned out of hard wood and formed into pickaxes. Tipped with iron or sharpened stone, these wooden pick axes were used by Ibaloi miners to chip off ore inside their cramped mines.

The gold mining technology utilized from Quirante's time (17th c.) up to the American contact period (late 19th c.) did not really evolve. It remained traditional, except for refined steel replacing the iron used in the tip of the pickaxes. Perhaps this was because there was never really a need to extract extensively. Ibaloi mining remained largely sustainable in character.

Lawrence Wilson was an American Prospector who wrote an ethnography of Ibaloi gold working early in the 20th c. which describes some of the important equipment employed by the Ibaloi in gold working:

The primitive tools of these patient miners are a short, pointed gad made of fire tempered wood or steel sometimes lengthened with a wooden handle, a stone or hardwood hammer, wooden wedges, a short wooden shovel together with various-sized baskets, woven of split bamboo.

While most of the iron is imported, the people early learned to work the metal and are good smiths. The bar is heated in a charcoal fire, shaped with a stone hammer, and tempered by plunging into water. The bellows used to produce air draft on the charcoal, may be a clever arrangement of wooden pistons working alternately in two or four bamboo cylinders. Sometimes hollowed logs, or boxes constructed of slabs of wood, have been used in place of bamboo. One box type has a single-double acting piston. An opening is provided in each end for the admission of air during the back stroke and a flap of hide is placed over this to act as a check valve during the down stroke. The simplest bellows is two fans, woven of split bamboo, which are waved alternately back and forth quite efficiently.

For lighting the tunnels a torch may be formed of a bundle of long thin splinters of pitchy pine wood. It has been a custom to start a fire either by striking flint with steel or through friction heat produced by rapidly twisting one bamboo stick in the hollow of another. Using his simple tools the Igorot has made many excavations along the line of the gold bearing veins. He would break down the rock by building a fire against its face and dashing cold water on the heated surface. He carries out the ore in baskets, the gangue likewise; or drags it out in larger baskets

or stone boats made of hollowed logs attached to carabao hide thongs. Many tunnels are necessarily small and tortuous—following the ore in the hard rock; but some credible shafts, raises, winzes, stopes, and fills are seen. The best Igorot methods of timbering, stoping, and back filling are admired even by American miners. (Wilson 1932:10-13)

The traditional methods of the Ibaloi are the lode mining method or *labon*, and the placer mining method or *sayew*. The simplest method is to pan for gold along the river and stream plains particularly in the dendritic drainage basin of the Agno and the Angalacan rivers.

Their method of breaking down rock to get the ore is quite impressive. As Wilson mentioned, they would build a fire against the face of the rock then suddenly dash cold water against the heated surface to break it². Ibaloi oral traditions further describe how water can be used:

A water canal is built from a water source to the mine site using hollowed pine whenever the earth cannot be dug into. Water is then dammed and collected at the source, released when its expected force is sufficient to break apart obstructing rocks or cause a hole to be bored into the mountain side (Bagamaspad & Hamada-Pawid 1985:71).

For the Benguet small-scale miners, the lode-mining method *labon* is done during the dry season.

The most characteristic manner of Igorot mining is to start working the gold bearing vein where it outcrops—it may be near the top of the mountain. During the dry season the men dig pot holes and dog holes one above the other. A long ditch is dug along the mountain to catch water during the rainy season or perchance, to conduct it from a convenient stream or spring. The ditch may lead directly to the workings, or to a storage reservoir, according to conditions. When sufficient head water is acquired it is directed into workings and they are boomed out—exposing the vein for the next season's work.

In this way, big cuts and slides are made. At Suyoc, the huge Pelidan Slide is half a kilometer wide; and the rich vein from which half a million pesos worth of gold is reported to have been taken, is covered several hundred feet underneath. In some

² The method of utilizing cold water and fire has also been used in the mines of South India (Miksic 1990:18).

places where the whole mountain is permeated with free gold and small stringers, the entire mass is being washed down; a part each year as the water is directed into different gullies.

In any case, the stream below is worked during the dry season and the gold bearing gravel panned by the women. (Wilson 1932:12-14)

A wooden shovel was then used to remove the dug-up sediments and as the tunnel gets deeper, a *baw-wang* (rattan or vine basket) is used to carry out the ore. At times the Ibaloi miners are suspended while chipping off gold outcrops on the face of a cliff,

They work over the faces of exposed cliffs, when necessary suspending themselves by means of rattans, and pick out the streaks of rich ore which show free gold. This they dig with their crude iron or steel implements, the use of powder being unknown to them. The ore, after being dug is crushed and panned. Both men and women also wash gold from the sands of the streams, and the women are especially famed for the skill with which they save the very light float gold—a skill which American miners have found impossible to attain. The gold is usually sold in the form of dust, although it is sometimes melted and run into ingots (Robertson 1917:520-521).

Placer-mining or *sayew* is conducted at the end of the rainy season when semi-permanent rock-walled sluice boxes are processed for accumulated gold ore sediments. Wilson reports that much of the Igorot mining is placer,

All the streams flowing from the auriferous regions are regularly worked after each rainy season. The best sections are usually owned and worked by certain individuals, some of whom have built intricate, permanent rock walled sluice boxes which catch the descending gold throughout the rainy season.

At the beginning of the dry season the men open up and repair or rebuild the sluice boxes—some of which are 25 meters long. The rough surface of the bed rock of the river channel serves as the bottom of the sluice box; while the sides are more or less symmetrically placed convenient boulders. A part of the stream is directed into this "box" and the gravel deposited during the high water, sluiced through; the heavy gold sinking to the bottom and being caught by the natural riffles formed by the crevices in the rock bottom. These riffles are then carefully cleaned out and

the contents panned by the women in the same manner as related previously (Wilson 1932:12-14).

The ore is crushed using an *ade teg kan/ gaidan* or large flat stone across on which they roll the *alidan* or small flat stone/mortar³. The ore is pulverized until it becomes as fine as sand. The dust will then undergo the process *sayew*, wherein gold dust is separated from the sand particles. This process is repeated several times until the unadulterated gold is extracted. Women were in charge of separating the gold dust from the ore slime. It becomes a social activity as women would group together with the children playing nearby,

The Igorot is expert in the recovery of gold from the ore. This is the work of the women. At a glance, they can pick out the pieces containing gold. These are broken, if necessary to about the size of a pea and then crushed by being placed on a large, hard, flat rock and rolled with a heavy stone—say fifty centimeters in diameter.

This ore is carried to a spring or stream where it is ground to a slime by rubbing. A hard, flat rock, placed perhaps on a wooden frame for convenience, is used for the nether stone; the ore is placed thereon, soaked with water, and rubbed back and forth with a fitted hand stone. There may be as many as a dozen of these rocks in one group or "mill," the women working sociably together and the small children playing about.

The slime is then panned in a shallow bark, or thin wooden shell, bound with bamboo. It is about 70cm long and 30 cm wide; turned up some 60 cm on the sides, being opened at the ends—one slightly more flaring. Water is slowly admitted at the opposite end and, accompanied by a certain gentle shaking movement all its own, together with handling, the waste is separated and washed off, leaving the glittering gold in the tail. This is removed to a half coconut shell and later stored in a small section of bamboo. Sometimes the juice of the leaf of the *aglayan plant* or of dampened tobacco is squeezed in the water while panning. This is to cause the fine floating gold to go to the bottom—the reverse of the modern flotation process (Wilson 1932:10-13).

³ This same technique of using a large stone to pound ore has been noted in Sumatra (Miksic 1990:22).

Wilson narrates that complex ores were less efficiently dealt with,

In free milling ores the clever women recover a very high percentage of gold; but in complex ores such as the tellurides and pyrites, they are not so successful. Sometimes they roast the ore before grinding; or they may afterwards set it away in a tunnel with salt, where natural disintegration takes place. They then pan it out *each year for a number of years*—saying that the gold is growing in the ore. But they have back filled tunnels with waste which assayed as high as 100 dollars per ton; and certain of their discarded concentrates have assayed 2,500 dollars per ton (Wilson 1932: 10-13). (Author's emphasis)

Gold was molded into bullions though at times the Ibaloi were also known to creatively mold this material into various ornaments and utensils (Wilson 1932:14).

When enough gold has been accumulated it is melted in a clay dish, with a charcoal fire, into bullion. It is often purified by means of several heatings: previously wrapping the impure gold together with some flux— salt, tobacco, clay, soda, ground glass, or a certain green leaf—in a piece of pig's gut; and knocking off the slag each time. Some of the Igorots are very adept in adulterating the gold and improving its color by the addition of copper and silver and a final light roasting in salt (Wilson 1932:10-13).

The milling process is usually the work of women. According to Ibaloi oral tradition accounts,

...the gold is cooked in an earthenware dish over charcoal fire. A wooden blower (piston-like bamboo) was used to keep the heat steady until the particles of gold melt and be formed into cakes. Then the finished product was ready for sale or as medium for exchange (Bagamaspad & Hamada-Pawid 1985:73).

Gold bullions measured by weight were traded in exchange for desired goods from the lowlanders. There were at least three types of gold used in barter as observed by the Spaniard Andres Mirandaola in his letter to King Felipe II in 1570. Arranged according to purity, the basic is the *bizlin*, followed by *malubay*, and the third is *linguiguin*. Keesing believes that the *linguiguin* gold referred to by Mirandaola is gold that came from Lingayen which undoubtedly came from the Ibaloi mines (1962:18). Other gold forms also used in trade by Filipinos included the *panica* or *orejera* or earrings and finer gold forms called *ylapo* and *guinuguran*. In the 16th c., according to de

Mirandaola, a tael (1.33 ounces) of *bizlin* and *malubay* would cost two pesos while the *linguiguin* cost four pesos (1570).

The Unpretentious Ibaloi Sustainable Gold Miner

The Ibaloi gold miner gathered gold only to meet their everyday needs; they did not really develop an enterprising spirit in using this yellow metal to enrich themselves. Carillo says that "the Igorots have managed their self-preservation by means of the metals which abound, since their rugged land scarcely permit anything else" (1756:287). Gold was a means of survival, making possible access to provisions from the lowlands. De Legaspi (1565) observed that they do not get more than what they need from the ground because this will anger *Balitok* (their god). Carillo also says, that the "custom of the Filipinos is to go to the placer or mine and get exactly what is necessary when they want to cover the cost of the tribute or their basic needs" (1756:273). It was only upon arrival of foreign vessels that they were induced to work on the mines long enough as to get what they would need for the transaction.

None of these Indians has more than a very little gold. If they get a couple of pairs of earrings and a couple of pairs of bracelets and a pair of anklets for the feet, they do not look for any more; they do not strive to hoard it. (de Rada 1569:224)

The Ibaloi were not so greedy as to desire more than what is necessary. But this was misinterpreted by some Spaniards as laziness,

... they do not work the mines steadily, but only when forced by necessity; for because of their sloth and the little work done by the slaves, they do not even try to be wealthy, nor do they care to accumulate riches... thus does their idleness surpass their covetousness. (de Legaspi 1565:56)

Salvador Lopez has noted a misinterpretation of this sustainable extraction of gold by the Ibaloi as laziness or sloth, in the account of the Spaniard de Loarca in 1582. Lopez added that de Loarca has written of the native's fear that if they worked the mines, the Spaniards would take them as captives (Lopez 1992). Tegengren also notes how the Spaniard de Sande in 1576 misinterpreted as avarice the native's custom of kissing gold talismans which was in fact adoration of the mystical powers of the object (1963:555).

The late 16th century saw various Spanish writers repeatedly mentioning the bountiful supply of gold in the Philippines, especially in Cordillera. The Spanish monarchy constantly prodded for capture of the Cordillera gold

mines. At the time, it was routine for one fifth of gold divested from the colonies to be remitted to the crown. Various internal as well as external problems plaguing Spain resulted in the meager financial state of the monarchy, further fuelling her demand for more gold (Mateo 2004).

Carillo suggested that the Spaniards should control the Ibaloi mines so that the true worth of the mineral would be realized,

... the Filipinos exploit it (gold) thus with their natural sloth and simplicity, it would be of great source of wealth should a more energetic method be applied to it or should Spaniards do it with the knowledge of prospecting and better milling that are employed in other places (1756:273)

Such writings became catalysts for different attempts to infiltrate the rugged Benguet Mountains to capture the gold mines. The Spaniards in the archipelago sought the approval of the crown through a series of correspondences. A Jesuit resolution called for a "just war" against the Igorots (Mateo 2004:191-193).

The worst fear of the Ibaloi was their disenfranchisement from their right to mine their gold resource, once the Spanish conquistadors gained access to it. More than ever, they felt that they had to take steps to protect their "earth-purse." In order to protect their gold from the Spanish colonizers, the Ibaloi response was to modify their way of life. They ventured into cattle herding and terraced agriculture. This allowed them to become more self-sufficient and less reliant on their lowland trading partners who were now colonized.

Carillo (1756) says that the Ibaloi pagans managed to hide the mines so that they would not come to the attention of the Spaniards. Quirino and Garcia also elaborate in their translation and interpretation of the Boxer Codex, a 16th century document which describes the gold-spangled life world of the Igorots, that the natives have much gold and it is understood "that they have many mines in the mountains, but they do not want to show them to the Spaniards and so they are not taken away from them" (1958:391).

Indeed the more than 300 years of Spanish presence in the Philippines did not bear witness to a Spanish takeover of the Ibaloi gold mines. This was due to the fact that the Ibaloi started to "curtail the production of gold in order to attract least attention from the Spaniards" (Tenrengren 1963:578). The Ibaloi believed that it is better to keep the gold 'in the earth than in their houses' (de Morga 1609).

State Policies Regulating *Balitok*— the Colonization of Philippine Gold

State policies on mining that were imposed starting from the Spanish contact period can be said to have ultimately effectively disenfranchised the Ibaloi gold miners from their gold-life resource. During the Spanish period, the colonizers imposed the Regalian doctrine.

(Article 1) In as much as the supreme control of the mines of the whole kingdom belongs to the crown and the Royal senora, no one shall have the right to exploit them, except those who have obtained it by special concession of the Supreme Government, and those who hereafter obtain it, in accordance with the regulation. (Decree of the Superior Civil Government 29 January 1846, quoted in Lopez 1992:29)

Under the Spanish rule, an average *pertencia* (concession) had a rectangular base of 300 meters with indefinite depth. Acquisition of *pertencia* was a right of every Spaniard, native, mestizo, or Chinese after satisfying all the legal requirements for ownership (Lopez 1992).

During the American period, even after eighty years of abandonment, the American Governor Colin reported that up to 100,000 pesos worth of gold was taken annually from the mines (circa 19th c.). "Benevolent assimilation" was the conduit for total invasion of the formerly autonomous Cordillera mountain region. American soldiers traded their Remington rifles in exchange for mine axes. They employed Kankanaeys as their scouts and assistants during the surveys.

Prospecting by the Americans in the early years was done not by looking for outcrops of gold but by befriending the "Igorots" and taking up residence with them in communities with known gold deposits, indicated by the fact that the natives wore gold ornaments... The Igorots eventually led the Americans to the lode formations where native mine working were found. (Lopez 1992)

The Philippine Bill of 1902 or the Organic Act was the basic framework for American colonial policy,

...That all valuable mineral deposits in public lands, both surveyed and not surveyed are declared to be free and open to exploration, occupation, and purchase by citizens of the United States, or of said islands... (Philippine Bill of 1902 section 21, quoted in Lopez 1992:62)

The Organic Act was promulgated to protect the claim of Americans, and to ensure they will get the Benguet gold. Before PB 1902 American investors had kept the location of their mining claims secret. With the passage of PB 1902 the American prospectors ritualistically complied with prerequisites so that their claims would be recognized. Only American prospectors benefited from the passage of PB 1902 as evidenced by the fact that only Americans complied with its implementing rules and regulations. The rendering of claims filed during the period according to Lopez shows an all-American cast, without any Filipino name emerging from the listing. "The transition to a new colonial era sharpened the conflict between indigenous and colonial concepts of property, in particular the concept of "ancestral lands" (Lopez 1992:63-68). The Americans went on to enjoy maximum gains from the "Gold Boom" period of the 1930s. The native Ibaloi miners were effectively eased out of their custom of the last seven centuries.

According to Lopez, the history of mining legislation can be divided into two periods, 1902-1935 and 1935-1946. The former protected American mining interests in the Philippines whereas the latter attempted to be more nationalistic, more protective of Filipino interests:

All mineral lands of the public domain and minerals belong to the State, and their disposition, exploitation, development, or utilization, shall be limited to citizens of the Philippines, or to corporations, associations, at least 60 percentum of the capital of which is owned by such citizens, subject to any existing right, grant, lease, or concessions at the time of the inauguration of the government established under the constitution. (Mining Act of 1936 Act 137 Section 3, quoted in Lopez 1992:68)

According to Lopez, the pre-war statute incorporated many features of the old PB 1902, which, in turn, had been based on the American Federal Mining Act of 1872. "The colonial character of the industry was clearly reflected in the nature of the mining laws intended to regulate it," thus, there were various proposals to overhaul the legislative framework, the major move coming in 1935 when the constitutional convention led by Claro M Recto introduced a highly nationalistic provision reserving for Filipino citizens or corporations owned by a Filipino majority the right to exploit the country's natural resources. This however was partly nullified by the post-war Parity Amendment (Lopez 1992).

The 1935 Constitution was good on paper but the Americans still found ways to avoid the 40/60 clause. They belittled the Commonwealth government and even claimed that the Philippine government was not a party

to the original contract and that it had no right to deny issuance of a patent to the locators of a claim (Lopez 1992). The Americans found ways to circumvent the 1935 Constitution. In the end, the 1935 Constitution merely reflected an emergent Philippine nation aspiration which was cut short by the Second World War.

True blue Filipinization of gold mining only happened after the lapsing of the Parity Rights amendment in the 1935 constitution in 1974 (to be replaced by the new "Service Contract" provision of the 1973 Marcos Constitution). The Parity Rights was a post-war provision in the Bell Trade Act giving Americans the same rights enjoyed by Filipino citizens but not given to other aliens. The big American gold mining firms started to dilute stock ownership in the mid-1970s with Filipino capital ownership at a minimum of 60%.

The Americans enjoyed an almost monopolistic control of the gold market before the termination of the Parity Rights. "Business Day's list of the top 1,000 corporations in 1971 included 17 mining companies in this elite group, of which five were American-owned," noted Lopez. "The 5 firms accounted for 75% of the total sales, income, and equity in 1971" (Lopez 1992:236-237). Of the twenty-one active mining companies in the early 1970s, only one firm, Samar Mining was one hundred percent Filipino owned.

For almost four decades, from 7 November 1936 to 17 May 1974 the mining industry was regulated by Commonwealth Act 137 otherwise known as the Mining Act of 1936. (Lopez 1992:278)

The magnitude and importance of the gold mining industry can be gleaned from its production valued at 77,332,373 million pesos in 1966 which represents 87.58% of national production in 1967 (Mills 1980). The Benguet gold boom was experienced from 1900-1931 whereas the gold rush was from 1931-1937. (A 'gold boom' is characterized by a steady increase of mining outfits-- more than forty gold mining companies registered with the Securities and Exchange Commission during this period. The gold rush is typified by increase in mining output-- mechanical mining in the Antamok gold district alone has produced eight hundred tons of gold since 1903 [Mitchell 1990].)

Conclusion

One notices in contemporary times how prevalent wet rice terracing has become among Ibaloi communities, especially at the municipality of Kabayan, Benguet. Wet rice cultivation techniques only developed in the

19th c. The first terraces of Northern Benguet were being built only in the 20th Century. It is highly probable that the primary mode of subsistence prior to the 19th Century was dry cultivation and root cropping (yams, camotes, etc.), supplemented with gold panning in the rainy season and gold mining in the dry season as can be seen in historical accounts (Keesing 1962:310).

The divide and rule policy of the Spaniards during the Spanish Contact period effectively put an end to an exchange network comprised of the upland Ibaloi and the lowland populations also referred to as the 'Northwestern Luzon Riverine Exchange Network' (Canilao 2009:101). The participants to this network became locked in distrust and combat with the labeling of the former as *busols* (headhunters) and the latter as *tulisanes* (traitors) during the Spanish Contact period. The Ibaloi decision to focus on other socioeconomic activities in order to protect their gold-life resource from the Spaniards, by shifting from gold mining to cattle herding in the 18th c and eventually terraced field agriculture in the 19th c, caused them to abandon the mountain slopes where the gold mines are located as they occupied the more fertile valleys and started to plant rice—a technology they may have borrowed from the Ifugaos of the East. Access to the mines then became open to the Kankanaey who served as guides to the American prospectors.

Presently, there are three types of gold mining industries found in Benguet: 1) there are the big corporations, 2) the "high-graders", and 3) the "camote miners" (Bagamaspad & Hamada-Pawid 1981:322). The first type gobble up a huge chunk of the Benguet gold profits. The capitalization of most of these mining companies has successfully been "Filipinized" in the 1980s, being formerly American-controlled. These big corporations tap Ibaloi and Kankanaey miners for manual labor. The second type involves the cutting-off of tailings pipes of the big corporations, which is done by desperate small scale miners in order for them to gain access to the gold content of the waste to be recovered (Lopez 1992:349). The third type, the Ibaloi "camote miners" are the traditional miners, small-scale miners, or pocket miners. Though they may enjoy some form of independence in their industry, they still serve as the base to a "pyramid of agents and middlemen" (Lopez 1992:344) who gain immense profits from the precious metal which is the product of the Ibaloi's hard labor. The degraded status of the Ibaloi in the gold industry is clearly manifested in their participation in each of the three types.

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