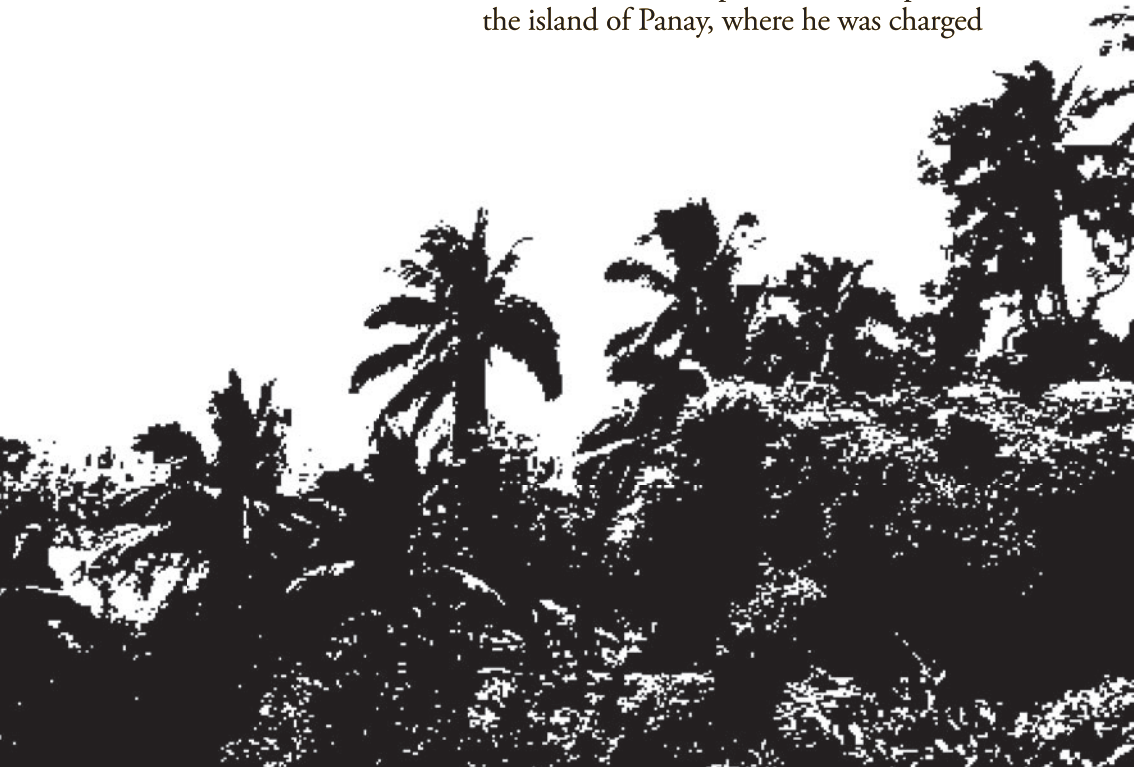


A Month in the Life of José Salud, Forester in the Spanish Philippines, July 1882

Greg Bankoff

The forests that were familiar to José Salud had long been modified by human endeavour. Indeed, it was the scale of this activity, the extensive deforestation, that prompted the Spanish colonial government in the Philippines to establish a forestry service, the *Inspección general de Montes*, in 1863. Salud was one of its employees, an assistant forester in the province of Capiz on the island of Panay, where he was charged



with overseeing all logging operations, surveying land, and collecting such dues as were owed to the state. Needless to say, his duties (especially those involving revenue) generated an extensive paper-trail that led from the forest back to the colonial capital in Manila. But, like so much of the records of the forestry service, all this was largely destroyed by fire and war in 1897. The misfiling of a personal report for July 1882 fortuitously provides us with a tantalising glimpse into the operations and methods of forestry in the last decades of the nineteenth century. Through the report's nine neatly handwritten folio pages, we are able to follow an assistant forester on his daily rounds over one month and, in so doing, come to realise just how the forest was being transformed from a resource and a refuge into something much more modern: An arena where state management practices and indigenous customary rights competed alongside those who saw trees as nothing more than a lucrative source of income.

The system of revenue-raising government reserves managed by professionally-trained forest conservators that characterises high colonial forestry is said to have its origins in the practices of the Indian Sub-Continent. The “empire forestry” model first advocated by Governor-general Lord Dalhousie in 1855 and subsequently codified by the Forest Act of 1878 spread from India to other colonies in Africa, Australasia and North America and constituted a practical application of German and French notions of scientific forest management to a non-European imperial context.¹ In Southeast Asia, however, this Indian model was never a direct implant but forestry was more a synergist blend of various European traditions, the predominance of whose

¹ On forestry in British India, see: B. Ribbentrop, *Forestry in British India*, Government of India Press, Calcutta 1902; E. Stebbing, *The Forests of India*, John Lane, London 1922-27. On more contemporary scholarship, see: K. Sivaramakrishnan, “Colonialism and Forestry in India: Imagining the Past in Present Politics”, in *Comparative Studies in Society and History*, 37, 1, 1995, pp. 3-40; G. Barton, “Keepers of the Jungle: Environmental Management in British India, 1855-1900”, in *The Historian*, 62, 3, 2000, pp. 557-574; R. Rajan, *Modernizing Nature: Forestry and Imperial Eco-Development, 1800-1950*, Oxford University Press, Oxford 2006. On empire forestry, see G. Barton, *Empire Forestry and the Origins of Environmentalism*, Cambridge University Press, Cambridge 2002.

elements depended on particular political, cultural and environmental circumstances. Thus Great Britain through India was the primary influence in Burma, Malaya and on independent Siam or Thailand, French traditions unsurprisingly held sway in France's own colonies of Indochina, and German forestry practices predominated in the Netherlands East Indies and the Spanish Philippines. All these colonies established forestry departments during the second half of the nineteenth and early twentieth century and exchanged ideas and even personnel on an irregular basis through official and private channels.²

While empire forestry may have been an imperial project, it was not solely a colonial venture; it was equally an indigenous enterprise. Its history is as much a tale about "native" rangers, local forest users and Chinese entrepreneurs as it is about European foresters and their scientific practices. The paper explores this colonial underside within the context of the late Spanish empire in the Philippines, the "left-over" imperium that was and still is so frequently branded as decadent, corrupt and ineffective and often dismissed by historians as a "pre-modern" anachronism in the great age of imperial realms.³ As such, the narrative is both a social and environmental history and a lesson on how the two need to be considered coequally as mutually reinforcing perspectives: people

² On comparative development of state forestry in other Southeast Asian colonies, see: R. Tucker, *Insatiable Appetite: The United States and the Ecological Degradation of the Tropical World*, University of California Press, Berkeley 2000; L. Potter, "Forests versus Agriculture: Colonial Forest Services, Environmental Ideas and the Regulations of Land-use Change in Southeast Asia", in *The Political Ecology of Tropical Forests in Southeast Asia: Historical Perspectives*, L. Tuck-Po, W. de Jong, A. Ken-ichi (eds), Kyoto University Press and Trans Pacific Press, Kyoto and Melbourne 2003, pp. 29-71; P. Vandergeest, N. Peluso, "Empires of Forestry: Professional Forestry and State Power in Southeast Asia, Part 1", in *Environment and History*, 12, 1, 2006, pp. 31-64; P. Vandergeest, N. Peluso, "Empires of Forestry: Professional Forestry and State Power in Southeast Asia, Part 2", in *Environment and History*, 12, 4, 2006, pp. 359-393.

³ On the historiography of the decline of Spain, see R. Kagan, "Prescott's Paradigm: American Scholarship and the Decline of Spain", in *American Historical Review*, 101, 1996, pp. 423-446. For the growing revisionist literature on this assessment, see J. Fradera, *Gobernar Colonias*, Ediciones Península, Barcelona 1999; C. Schmidt-Nowara, J. Nieto-Phillips, *Interpreting Spanish Colonialism: Empires, Nations, and Legends*, University of New Mexico Press, Albuquerque 2005.

without environment are like plot without context; environment without people is like context without agency.⁴ By using the monthly report as a framework to discuss the policies and practices of scientific forestry in the islands, the account reveals the extent to which society and environment were already in flux, part of that “century of the frontier” that was to culminate in revolution, war, re-occupation and the wholesale commercialisation of nature.⁵

The forest and the man

The island world that José Salud came to know had changed much since the initial European contact in 1521.⁶ The great forests of dipterocarps that had dominated the landscape had largely receded from around the main centres of Spanish power.⁷ The molave forest, the most valuable and sought after of all hardwoods on account of its strength and durability, was already scarce. The coastal forests of beech had all but vanished. The other three forest types, the mangroves that grew on mudflats at the river mouths and along the shoreline, the pine forests of the upland plateaus, and the mossy-forests in the high mountain regions had all experienced varying degrees of more localised exploitation.⁸ Much of the forest had simply been cleared by agri-

⁴ On the “common ground” between environmental and social history, see S. Mosley, “Common Ground: Integrating Social and Environmental History”, in *Journal of Social History*, 39, 3, 2006, pp. 915-933.

⁵ The reference is to John Larkin’s seminal essay. J. Larkin, “Philippine History Reconsidered: A Socioeconomic Perspective”, in *The American Historical Review*, 87, 3, 1982, pp. 595-628.

⁶ G. Bankoff, “Almost an Embarrassment of Riches: Changing Attitudes to the Forests in the Spanish Philippines”, in *A History of Natural Resources in Asia, The Wealth of Nature*, G. Bankoff, P. Boomgaard (eds), Palgrave-Macmillan, New York 2007, pp. 103-122.

⁷ D. Perez, “Relation of the Zambals, 1680”, in *The Philippine Islands, 1493-1803*, E. Blair, A. Robertson (eds), A.H. Clark Co., Cleveland (Ohio) 1903-1909 (hereafter *BRPI*), vol. 47, p. 292; P. Velasco, “Later Augustinian and Dominican Missions, Tondo, 16 April 1760”, in *BRPI*, vol. 48, p. 91.

⁸ H. Whitford, *The Forests of the Philippines*, Parts I and II, Bureau of Printing, Manila 1911, pp. 17-32. Dipterocarps comprise a very varied number of species

culture and settlement as the population of the archipelago rose from under a million in the mid sixteenth century to about seven million by the end of the nineteenth.⁹ Spaniards also felled trees. Timber was required to build and rebuild the towns and churches destroyed by fire or earthquakes, or just heat and moisture.¹⁰ Ships were needed, too, lots of them, to defend Spain's new possessions in the East. The amount of wood consumed in naval construction over the centuries was substantial and the exactions on local people onerous, provoking a major revolt on more than one occasion.¹¹

All this amounted to a very changed landscape in many of the archipelago's islands by the late nineteenth century. The extent of deforestation

that include valuable hardwoods such as amugis (*Koordersiodendron pinnatum*), guijo (*Shorea guiso*), kalumpit (*Terminalia micocarpa*) and yakal (*Hopea malibato*) as well as lesser quality hardwoods like apitong (*Dipterocarpus grandiflora*), lauan (*Shorea contorta*) and tanguile (*Shorea polysperma*). The molave forest is composed of non-dipterocarp hardwoods such as batete (*Ficus baletae*), ipil (*Leucana leoccephala*), narra (*Pterocarpus indicus*) and, of course, molave (*Vitex parviflora*).

⁹ For a study of agricultural expansion, see: M. McLennan, *The Central Luzon Plain: Land and Society on the Inland Frontier*, Alemar-Phoenix Publishing, Quezon City 1980; C. Lataillade, A. Dumontier, N. Grondard, *L'Agriculture des Philippines La Plaine Centrale: Histoire et Perspectives*, Les Indies Savantes, Paris 2002. Similar clearances were taking place all over the tropical world where some 222 million hectares of forest were brought under cultivation or transformed into grasslands between 1700 and 1920. M. Williams, *Deforesting the Earth: From Prehistory to Global Crisis*, Chicago University Press, Chicago 2003, pp. 334-335.

¹⁰ G. Bankoff, "Fire and Quake in the Construction of Old Manila", in *Medieval History Journal*, 10, 1-2, 2007, pp. 411-427. On Spanish architecture, see L. De Viana, *Three Centuries of Binondo Architecture 1594-1898: A Socio-Cultural Perspective*, University of Santo Tomas Publishing House, Manila 2001. On indigenous house construction, see: R. Perez, R. Encarnacion, J. Dacanay, *Folk Architecture*, GCF Books, Quezon City 1989; F. Zialcita, M. Tinio, *Philippine Ancestral Houses (1810-1930)*, GCF Books, Quezon City 1980.

¹¹ J. Vila, "Condition of the Islands, Manila, 7 October 1701", in *BRPI*, vol. 44, p. 126; O. Corpuz, *The Roots of the Filipino Nation*, Aklahi Foundation, Quezon City 1989, vol. 1, pp. 124-128. A seventeenth or eighteenth century European warship of 1,000 tons required about 2,000 mature oak trees or the equivalent of from 16-20 hectares of woodland. Williams, *Deforesting the Earth* cit., p. 193. This figure may be overly conservative as a similar figure was reached for a smaller vessel. C. Phillips, *Six Galleons for the King of Spain Imperial Defense in the Early Seventeenth Century*, John Hopkins University Press, Baltimore 1986, p. 80. Major revolts occurred in 1614 and 1649.

tion is difficult to reconstruct but an attempt at systematically describing the provinces was first attempted in 1871-1872 by Ramón Jordana y Morera in his *Memoria sobre la Producción de los Montes Públicos de Filipinas*. The provinces around Manila including Bataan, Cavite, Morong, and the Isla de Corregidor were already extensively deforested. Abra and Laguna, too, had lost much of their cover, while Cebu and Bohol were virtually denuded of trees with perhaps as little as 6.6 and 11 per cent cover respectively remaining.¹² The main timber-producing areas were now Bulacan, Masbate, Mindoro, Nueva Ecija, Pampanga, Romblon, Zambales, and especially Tayabas. Agriculture was encroaching upon the woodlands of Batangas, Isabela, Panay, and the Ilocos region. Usage was primarily for local purposes in Camarines, La Union, Pangasinan, Lepanto, Tiagan, and Balabac. Primary forest was still to be found only in central Luzon (Cagayan, Infanta, and Nueva Vizcaya), parts of the Visayas (Siquijor, Negros, Samar, and Leyte), some of the smaller districts and island chains, and on Mindanao (Map 1).¹³

The loss of so many trees affected local environments, an impression corroborated by the descriptive account provided by Sebastián Vidal y Soler's *Memoria sobre el Ramo de Montes*.¹⁴ Foreshadowing the drone of today's chainsaws, he records how the destruction of the forest wrought by "axe and fire has no moment of repose".¹⁵ He elaborates on the scale of logging activities in the provinces of Tayabas and Nueva Ecija, the loss of forest cover in Batangas, Cavite, the greater part of Bataan, and on nearly all the mountainsides of the Pacific west coast.¹⁶ He observes how deforested slopes caused rivers to run dry or turn into raging tor-

¹² R. Jordana y Morera, "Memoria sobre la Producción de los Montes Públicos de Filipinas en el Año Económico de 1871-72", in *Boletín Oficial del Ministerio de Ultramar*, 27 November 1873, pp. 6-9, 12 December 1873, pp. 1-6, 27 December 1873, pp. 1-10, 12 January 1874, pp. 1-10. S. Vidal y Soler, *Memoria de la Colección de Productos Forestales Presentada por la Inspección General de Montes de Filipinas en la Exposición Universal de Filadelfia*, Manila 1875, p. 39.

¹³ Jordana y Morera, "Memoria sobre la Producción" cit.

¹⁴ S. Vidal y Soler, *Memoria sobre el Ramo de Montes en las Islas Filipinas*, Imprenta, Estereotipia y Galvanoplastia de Aribau y C.^a, Madrid 1874.

¹⁵ *Ibid.*, p. 28.

¹⁶ *Ibid.*, p. 11.

Map 1. Philippines Forest Cover c.1900



rents and floods like the one that devastated Pampanga in 1871. He remarks on how navigability along rivers such as the Pasig and the Rio

Grande de Cagayan had deteriorated. On a visit to the South, to the largely still unexploited forests of Mindanao, he notes how progress further upstream than two kilometres on the Parang-Parang River near Pollok was no longer possible as “the water level scarcely reached half way up one’s leg”.¹⁷ As elsewhere in the nineteenth century, people in the Philippines had already begun to associate loss of forest cover with decreasing precipitation, citing Cebu as a case in point. In Manila, long-time residents complained of climate change, that hot spells were more extreme and the rains less. Others lamented the loss of defence against strong winds: How the forest had acted as a barrier against the typhoons that regularly strike the archipelago between July and November.¹⁸ All this real and anecdotal evidence pointed to the fact that the “myth” of an archipelago covered in an inexhaustible mantle of tropical forest “could not be further from the truth”.¹⁹

Only in the last quarter of the nineteenth century are the first quantitative statistics on the scale of this deforestation available. A detailed provincial breakdown of forest cover compiled by the Spanish forestry department was published in 1875 on the occasion of the Philadelphia Universal Exposition. It estimated that 19,405,915 hectares or 70 percent of the islands was still forested after more than 300 years of Spanish rule.²⁰ This percentage, however, is based on the total land area of the present nation state and not on the territories under effective colonial administration. Until the early twentieth century, much of the untouched forests of Mindanao, the second-largest island in the archipelago, lay beyond the effective control of colonial authorities in Manila. Subtracting the latter’s 9,463,000 hectares from the approximate total of 30 million hectares and recalculating the extent of forest cover yields a much lower figure. According to this calculation, about half the forest cover in areas under Spanish control had already disappeared prior to the American era.²¹

¹⁷ *Ibid.*, pp. 38-41.

¹⁸ On typhoons, see G. Bankoff, *Cultures of Disaster: Society and Natural Hazard in the Philippines*, Routledge, London 2003, pp. 41-47.

¹⁹ Vidal y Soler, *Memoria sobre el Ramo de Montes* cit., p. 36.

²⁰ Vidal y Soler, *Memoria de la Colección* cit., p. 40.

²¹ G. Bankoff, “One Island Too Many: Reappraising the Extent of Deforesta-

Indeed, it was the scale of this destruction that partly prompted Spain to create a colonial forestry department.²²

While Panay was not one of the most deforested islands, its tree cover had declined precipitously by the time that Salud was an assistant forester there. Only in the island's rugged central cordillera that extended like a seam through its core and among the adjacent foothills were forests still extensive (Map 2). Even in the mountains, though, only remnant stands survived on the slopes separating Capiz from Iloilo (district of Dumarao).²³ Only under a third of the province's land area, some 134,000 hectares, was still forested by 1882.²⁴ A clearer picture of land usage, though several decades later, is provided by the 1918 American census that recorded 28.9 per cent forest (127,500 hectares), 44.2 per cent (195,000 hectares) open land, 21.7 per cent (96,130 hectares) cultivated, and 5.2 per cent (23,140 hectares) salt marsh.²⁵ Among the prevalent timber species found in the province were valuable hardwoods like molave, narra, ipil and guiyo. In general, however, the Visayas were not regarded as a major wood producing area by this time and the timber obtained from there was characterised as of meagre size and roughly hewn by axe, with great loss of material and with much destruction to saplings.²⁶ The extent of commercial logging is even less certain: Only two timber licenses were issued for the years 1871-1872 and no record of any shipment to Manila, suggesting that demand was mainly local.²⁷

tion in the Philippines Prior to 1946", in *Journal of Historical Geography*, 33, 2, 2007, pp. 314-334.

²² R. García, *Brief Review of the Forestry Service during the Spanish Government from 1863 to 1898*, Pinchot Papers, Box 586, File: Forestry, Philippine Islands, Bureau of Forestry, General Organization, Library of Congress, Washington D.C. 1903, p. 1.

²³ Jordana y Morera, "Memoria sobre la Producción" cit., p. 4.

²⁴ Vidal y Soler, *Memoria de la Colección* cit., p. 38.

²⁵ *Annual Report of the Director of Forestry of the Philippine Islands, 1932*, Bureau of Printing, Manila 1933, pp. 676, 732-737. The Spanish and American figures are not completely comparable given the different estimates of the province's land area, respectively 402,510 and 441,176 hectares.

²⁶ R. Jordana y Morera, *Memoria sobre el Comercio de Maderas en Filipinas*, Imprenta de Ricardo Roja, Madrid 1894, p. 10.

²⁷ Jordana y Morera, "Memoria sobre la Producción" cit., p. 4.

Map 2. Western Visayas showing the remaining forests (shaded areas), c.1900



Even less is known about Salud, the man. Nothing more is sure about his life or person except for the fact he was an *ayudante* or assistant forester for the *Inspección general de Montes* in Capiz during July 1882.²⁸ It is reasonable to surmise that he was a Filipino. Very few details are available about the personnel of the Spanish forestry department at a level below that of chief engineer. The only account of the service that deals with this aspect was written by Regino García, himself an assistant forester. He was subsequently employed by the Insular Bureau of Forestry under the American administration and wrote a brief history of it for his new boss, Captain George Ahern. Speaking about the eligibility of assistant foresters, he mentions how they were graduates of the Agricultural School with qualifications in agriculture, land surveying, topography and botany and that preference was given to those who had experience with the peninsular forest service. However, either he or Ahern has added a handwritten addendum to the effect that they were “natives as a rule”.²⁹ As an assistant forester, Salud was in charge of a forest section, investigating all infractions of the regulations and reporting such matters to his immediate superior, the forest engineer, invariably a Spaniard. He was an official who wielded considerable authority, in command of the rangers within his section and charged with the demarcation of smaller parcels of land under application of sale.³⁰ The late Spanish colonial administration created various agencies that were not police forces as such but who possessed policing powers in varying degrees. These paramilitary units operated directly as instrumentalities of the state not only in forestry but in the sphere of customs/revenue col-

²⁸ All details on the activities of José Salud are drawn from his monthly report to the service head for July 1882. *Parte Mensual que el Ayudante que suscribe encargado de la Sección de Capiz dar Señor Ingeniero Jefe del Distrito en cumplimiento de lo dispuesto por la Inspección general del Ramo*, Capiz, 13 October 1882, Philippine National Archive (hereafter PNA), Corte de Maderas, Bundle 6.

²⁹ García, *Brief Review* cit., p. 7. García, however, appears to have been Spanish; at least he was subsequently dismissed by one of the newly appointed American foresters as “only an old Spanish botanist, who could not speak the English language”. *XII Philippines*, Pinchot Papers, Box 640, File: Philippines, John Lydenberg’s Account of Gifford Pinchot, Library of Congress, Washington D.C.

³⁰ García, *Brief Review* cit., p. 10.

lection (*resguardos*), public health/safety (*policía urbana* and *cuero de vigilancia*), and social relations (*policía de la servidumbre doméstica*). The personnel of these organisations often enjoyed the power of arrest, fine or otherwise had the ability to institute legal proceedings.³¹

Scientific forestry under Spain

The notion that scientific forestry only arrived in the Philippines with the advent of American rule could not be further from the truth and constitutes part of the continuing denigration of the late Spanish empire. The fact that a forestry service existed in the archipelago some twenty years before one existed in the USA has been mainly ignored by historians, who generally portray Spanish colonial forestry as undeveloped even if well intentioned.³² This was certainly the opinion of early American officials. Their attitudes towards Spanish forestry were ambivalent, a combination of grudging respect for its intent but outright condemnation of its practices, especially the state's apparent inability to enforce its own decrees. "The forestry laws and regulations in force in August 1898", wrote George Ahern, first bureau chief of the American forestry service in the islands, in a report dated 15 August 1900, "are found to be excellent, practicable, and in line with the most advanced forestry legislation of Europe." Unfortunately, these laws and regulations were not properly enforced: "Licensees cut any and everything; trees to be felled were not selected; any tree, no matter how small could be felled." It was all a matter of revenue, Ahern inferred, and "the officers began their work after the tree left the forest, and not before".³³

³¹ G. Bankoff, *Crime, Society and the State in the Nineteenth Century Philippines*, Ateneo de Manila University Press, Quezon City 1996, pp. 153-154.

³² D. Roth, "Philippine Forests and Forestry, 1565-1920", in *Global Deforestation and the Nineteenth-Century World Economy*, R. Tucker, J. Richards (eds), Duke Press Policy Studies, Durham 1983, pp. 30-49; R. Tucker, "Managing Subsistence Use of the Forests: The Philippines Bureau of Forestry, 1904-60", in *Changing Pacific Forests: Historical Perspectives on the Forest Economy of the Pacific Basin*, J. Dargavel, R. Tucker (eds), The Society, Durham 2000, pp. 105-115; Tucker, *Insatiable Appetite* cit.

³³ G. Ahern, *Special Report of Forestry Bureau, Philippine Islands Covering the Period from April, 1900, to July 30, 1901*, Government Printing Office, Washington 1901, p. 11.

To what extent was this a fair assessment of Spanish forest policy in general and the *Inspección general de Montes* in particular? Forest regulations long preceded the establishment of a forestry service and were based on the *Recopilación de las Leyes de Indias*, the body of laws that over the centuries evolved into a comprehensive colonial treatise for administering the Americas including the Philippines. These laws enshrined the dual notion of protecting customary access to and conservation of the forest. Specifically law 14, chapter 17, book 4 promulgated in 1594 made two provisions: First, it protected indigenous people's right to cut timber for their own use and, second, it forbade all activities that might impede the growth of the forest. The "spirit" of this legal corpus and its regard for native rights was regarded by Spaniards in the nineteenth century as constituting "the glory" of Spanish dominion in the archipelago and was compared favourably to the policy of other colonial regimes such as the English and Dutch who were solely interested in maximising profits.³⁴ Subsequent laws confirmed rights to settle "waste lands" (*baldíos realengos*) and placed limitations on Spanish alienation, forbidding grants that might "disadvantage" local people (1680). They established judicial and extra-judicial mechanisms for resolving the disputes that arose over such matters (1754) and confirmed the *pueblo* (town/village) in the free enjoyment of contingent communal lands, waters and pastures (1797).³⁵ Unfortunately, as even Vidal y Soler had to admit, these laws were largely disregarded in the archipelago and the ones enacted during the first half of the nineteenth century were mainly aimed at encouraging agricultural expansion (1803, 1813, 1819, 1858 and 1862).³⁶ It was the flagrant disregard for these laws, the sheer scale of the destruction, the apparent shortage of timber in many areas, and public criticism that the govern-

³⁴ Vidal y Soler, *Memoria sobre el Ramo* cit., pp. 59-60, 81.

³⁵ *Ibid.*, pp. 61-65.

³⁶ *Ibid.*, pp. 65, 67. Specifically the following laws: Intendentes Order of 1803, Córtes decree of 4 January 1813, Royal Resolution of 16 July 1819 and the Royal Order of 4 February 1862. However, even the royal order of 16 March 1858 still reiterated "the constant desire to advantage the indigenous proprietor over the European".

ment had simply “abandoned” the forest that persuaded the colonial administration to establish a forestry service in 1863.³⁷

Of course, there were other forces at work in the forests of the Philippines by then, not least the emergence of a commercial market for wood and the perceived need to manage the remaining stands in a scientific manner. Certainly, a timber market had emerged in the archipelago by mid century. Joseph Burzynski’s study of local shipping records shows how what began as a fragmented, poorly ordered and inefficient trade in 1864 developed into a more coherent, better structured and increasingly specialised one by the late nineteenth century, a trade, moreover, increasingly synchronised with and responsive to the forces of supply and demand.³⁸ The stimulus for this market was the growth of Manila and to a lesser extent other urban centres. The capital’s population tripled from 93,000 in 1814 to about 340,000 inhabitants by 1896.³⁹ The rapid urbanisation of the capital generated a strong demand for timber that soared in the aftermath of the great earthquakes that shook the capital in 1863 and again in 1880. Owners with substantial houses to repair turned to the market for the timber they required. Prices rose and local merchants saw an opportunity to make substantial profits. Such was the devastation in 1863, moreover, that it prompted a change in house design and the replacement of stone by wood to give buildings extra flexibility.⁴⁰ A calamity fund was even suggested after the 1880 earthquake in the form of a stockpile of timber on the island of Masbate to prevent future profiteering.

³⁷ Ibid., p. 20; R. Jordana y Morera, *Estudio Forestal acerca de la India Inglesa, Java y Filipinas*, Imprenta de Moreno y Rojas, Madrid 1891, p. 228; García, *Brief Review* cit., p. 9.

³⁸ J. Burzynski, “The Timber Trade and the Growth of Manila, 1864-1881”, in *Philippine Studies*, 50, 2, 2002, pp. 171-180.

³⁹ J. Foreman, *The Philippine Islands: A Political, Geographical, Ethnographical, Social and Commercial History of the Philippine Archipelago and its Political Dependencies, Embracing the Whole Period of Spanish Rule*, C. Scribner’s Sons, New York 1899, p. 355; M. Foronda, *Insigne y Siempre Leal: Essays on Spanish Manila*, De La Salle University, Manila 1986, p. 135.

⁴⁰ Zialcita, Tinio, *Philippine Ancestral Houses* cit., pp. 66-67.

Fire, too, prompted a continual and rising demand for timber, especially as, starting in the late eighteenth century, an increasing number of more substantial stone and wood houses came to be built among the nipa palm and bamboo structures on the right bank of the Pasig opposite the old walled Spanish citadel of *Intramuros*. Over the next century, this shift became more marked as the suburbs of Binondo and, to a lesser extent, Santa Cruz emerged as the new commercial, wholesale and retail centre of the archipelago.⁴¹ All this expansion and construction made for a very volatile environment, especially as nipa palm and stone houses lay alongside one another even in the most fashionable streets. The fires that continually swept through the former now threatened to consume much more substantial dwellings. The inevitable happened on 23 March 1870 when a fire broke out in the heart of the new retail sector. The flames spread rapidly and “within a few short hours and in the midst of the most desperate consternation”, reported the *Gaceta de Manila*, property and merchandise “amounting to the enormous sum of a million pesos” were reduced to ashes and the fire “threatened to destroy all or the greater part of the richest and most populated districts of Manila”.⁴² So great was the destruction that it provided a significant impetus to the timber market and together with the two earthquakes encouraged the reckless felling of trees many of which were left to rot on mountain sides or beaches.⁴³

Along with this growing demand for timber and the increasing problems of supply was the realisation that the forests of the Philippines needed to be managed in a more scientific way both to encourage production and to meet future demand. More, the forest question

⁴¹ X. Huetz de Lempis, “Materiales Ligeros vs. Materiales Fuertes: The Conflict between Nipa Huts and Stone Buildings in 19th-Century Manila”, in *The Philippine Revolution and Beyond*, Elmer Ordoñez (ed.), National Commission for Culture and the Arts, Manila 1998, vol. 1, p. 162. The indigenous house, the so-called *bahaykubo*, was primarily constructed of bamboo (*Bambusa blumeana* Schultes. f.), roofed with nipa palm (*Nipa fruticans* Wurmbr.), lashed together with rattan (*Calamus maximus* Blanco) and raised on hardwood poles, preferably molave known as *haligues*.

⁴² *Gaceta de Manila*, 16 December 1870, p. 1213.

⁴³ Jordana y Morera, *Estudio Forestal* cit., pp. 252-253.

was perceived as inextricably bound up with the development of the colony, especially its agriculture and exports. A lack of wood was seen as impeding progress. Vidal y Soler recounts the case of Gustavo Töbler whose attempt to establish a coffee plantation on the slopes of Mt. Banahaw in the early 1870s floundered on the lack of suitable local timber.⁴⁴ Vidal y Soler's *Memoria sobre el Ramo de Montes* published in 1874 provides insights into the mindset of Spanish foresters in the Philippines at the time. The author is uniquely qualified to provide such evidence. He arrived in the archipelago in October 1871 to take charge of the forestry service. He immediately set to work making a detailed study of the islands' flora before being commissioned to carry out a survey of the still largely unknown southern island of Mindanao. Concern over his health necessitated a return to Spain but he returned again in March 1876, this time appointed to head the Philippine Flora and Statistical Commission. He died, untimely, in July 1889 while serving as chief forest engineer for the third time.⁴⁵

The model that Vidal y Soler and the other Spanish foresters had in mind was nothing less than “the same steps as in the forests of other European nations”, namely a programme of artificial reforestation and scheduled logging that took account of the particular characteristics of specific trees.⁴⁶ To achieve these ends, two matters required preliminary attention. First, there was a need for adequate botanical knowledge. “There is not a single work of phytography [scientific description of plants] of the Philippines, neither good nor bad, complete or incomplete, informed by natural taxonomies”, he

⁴⁴ Vidal y Soler, *Memoria sobre el Ramo* cit., p. 102.

⁴⁵ García, *Brief Review* cit., pp. 1-5. Among the other principal works of Sebastian Vidal y Soler are: S. Vidal y Soler, *Sinopsis de Familias y Géneros de Plantas Leñosas de Filipinas: Introducción a la Flora Forestal del Archipiélago Filipino*, Chofré y Compañía, Manila 1883; S. Vidal y Soler, *Phanerogamae Cumingianae Philippinarum: ó, Índice Numérico y Catálogo Sistemático de las Plantas Phanerogamas Coleccionadas en Filipinas por Hugh Cuming, con Características de Algunas Especies no Descritas y del Género Cumingia (Malváceas)*, Establecimiento Tipo-litográfico de M. Pérez Hijo, Manila 1885; S. Vidal y Soler, *Revisión de Plantas Vasculares Filipinas: Memoria Elevada al Excmo. Sr. Ministro de Ultramar*, Establecimiento Tipo-litográfico de M. Pérez Hijo, Manila 1886.

noted.⁴⁷ The only work of any standing was that compiled by Fr. Manuel Blanco, an Augustinian friar whose religious duties afforded him the opportunity to travel extensively throughout Luzon and the Visayas during the early nineteenth century. Blanco's *Flora de Filipinas*, first published in 1837, was the most comprehensive study of the Philippines yet but contained many errors.⁴⁸ Two posthumous editions published in 1845 and 1877-1883 did much to remedy these deficiencies and the latter one prepared by Fr. Celestino Fernandez-Villar identified plants by their proper Linnaean names.⁴⁹

Complementary to this endeavour was the need to survey and map the forests. Surveys were needed to determine which land should be logged and sold and which should be reserved and kept under tree cover.⁵⁰ Forestry from this perspective was closely associated with making what were deemed "barren lands" more productive, primarily by converting them to agricultural purposes. At the same time, recognition was accorded to conserving other lands for hydrological and environmental reasons because they served as watersheds, important sources of freshwater, or provided protection against typhoons, landslides, erosion, flood and drought.⁵¹ The difficulties of implementing such a grand project were appreciated. Unfavourable comparisons were drawn between the Philippines and Spain, especially with regard to the problems inherent in carrying out such a survey in the archipelago. It was also realised that a successful mapping of the forests required the cooperation of local people.⁵² Unfortunately, the Philippines were "a country where movement is very costly" and scientific practice came to be seen as at the expense of native rights.⁵³

⁴⁶ Vidal y Soler, *Memoria sobre el Ramo* cit., p. 25.

⁴⁷ *Ibid.*, p. 115.

⁴⁸ Fr. M. Blanco, *Flora de Filipinas Segun el Sistema Sexual de Linneo*, Imprenta de Sto. Thomas, Manila 1837.

⁴⁹ E. Merrill, *Botanical Works in the Philippines*, Bureau of Agriculture, Bulletin No. 4, Manila 1903, pp. 8-17.

⁵⁰ Vidal y Soler, *Memoria sobre el Ramo* cit., p. 126.

⁵¹ *Ibid.*, pp. 36, 38-39, 98. A bill implementing such measures had already been adopted in Spain in 1862.

⁵² *Ibid.*, pp. 119, 121.

⁵³ *Ibid.*, p. 127.

Nineteenth century Spaniards were fairly sanguine about their own qualities; Vidal y Soler described the national character as unsteady and impatient, more appropriate for heroic sacrifices than team work and the patience necessary for any large organisation. “For this reason”, he surmised, “we figure in history as incomparable discoverers and conquerors but only middling colonisers.”⁵⁴ Yet, there was no doubting the “scientific” nature of the attitudes espoused by him and other foresters. The need to systematically collect specimens was appreciated: Not only slices of wood taken at 20 year intervals but also seeds, leaves, resins, gums, extracts, cords and even local implements fashioned from wood. Explicit, too, was the importance of collecting rock samples from around the islands so as to determine the qualities of the sub-soil and the vegetation that grew upon it.⁵⁵ Even when it came to apportioning public forests for sale, plots were divided into various sizes according to the vagaries of topography, using watersheds and rivers to determine boundaries.⁵⁶

This scientific approach to forestry culminated in the establishment of the *Inspección general de Montes*. The fullest account of this service is provided by Ramón Jordana y Morera, himself chief forester who succeeded Vidal y Soler in the early 1870s and remained in that post till his return to Spain in 1881 on account of poor health.⁵⁷ In 1891, he published his *Estudio Forestal*, a comparison of forest services in British India, the Netherlands East Indies and the Spanish Philippines. Jordana y Morera divides the history of the latter into three phases: From its inception in 1863 to the passing of the new forest legislation at the beginning of 1873; a middle phase lasting till 1881 during which the responsibilities and number of personnel expanded greatly; and a post 1881 period when the volume of land sales threatened to overwhelm the service’s other responsibilities.⁵⁸ Jordana y Morera returned home in 1881 and so did not witness the economy measures instituted after

⁵⁴ Ibid., p. 108.

⁵⁵ Ibid., pp. 133-134.

⁵⁶ Ibid., p. 105.

⁵⁷ García, *Brief Review* cit., pp. 1-3.

⁵⁸ Jordana y Morera, *Estudio Forestal* cit., p. 277.

1886 following the tenure of Luis de Escosura as chief forester, suggesting, perhaps, a fourth and final phase till the service's demise in 1898.⁵⁹

The service began modestly with the arrival in June 1863 of Juan Carlos Valdez as chief forester along with four assistants, graduates of the Spanish state forestry school or members of the forestry department who had completed four years of study organised along German scientific models.⁶⁰ At its peak, however, in 1881, the *Inspección general de Montes* constituted a sizable agency comprising nine foresters, fifty-six assistants, six senior and fifty minor guards plus a number of clerks, porters and orderlies. Senior personnel were recruited from Spain and belonged to the peninsula forest service, continuing in their regular grade while serving in the archipelago. Assistant foresters, as previously mentioned, were also graduates with preference shown to those who had experience with the peninsular service. Since personnel of this rank were “natives as a rule”, this suggests the intriguing possibility of a group of indigenous foresters trained and working in Spain before returning to the islands. The ranks of ranger were mainly recruited from the military with preference given to discharged non-commissioned officers and agricultural overseers.⁶¹

The primary legislation the service operated under was the provisional forestry regulations of 8 February 1873, though many attempts to ameliorate the worst abuses and enforce the provisions of the Laws of the Indies had been taken beforehand, including the superior decree of 18 December 1867 that prohibited all cutting of timber in the mountains without government licence.⁶² The new law classified all forest lands into those available for agricultural development and those that due to their environmental sensitivity should remain permanently timbered. It restated native rights to forest use but drew up provisions for the demarcation of such *leguas comunales*. And it tripled the size of the *Inspección general de Montes* in an attempt to provide it

⁵⁹ García, *Brief Review* cit., pp. 3, 5.

⁶⁰ J. Nano, “Brief History of Forestry in the Philippines”, in *The Philippine Journal of Forestry*, 8, 1-4, 1953, p. 13. The Spanish state forest school was founded at Villaviciosa de Odon and later moved to the Escorial near Madrid in 1869 by graduates trained at Tharandt in Germany.

⁶¹ García, *Brief Review* cit., p. 7.

⁶² Jordana y Morera, *Estudio Forestal* cit., pp. 228-229, 234, 237.

with the personnel necessary to enact these measures. While Jordana y Morera considered that the regulations had been drawn up according to the most advanced scientific principles and with the best interests of state and country in mind, they had been formulated with “little knowledge on how best to achieve these aims and [in ignorance] of the customs and necessities of the inhabitants”.⁶³

A notable success of the forest service was in the arduous task of collecting materials for the Philadelphia Universal Exposition of 1876.⁶⁴ Again, this duty was entrusted to that stalwart, Sebastián Vidal y Soler, who not only successfully carried out his mission but who also took the opportunity to write the first comprehensive provincial assessment of the remaining forest cover and the species that grew in them.⁶⁵ Vidal y Soler was later also responsible for the work of the Philippine Flora and Statistics Commission created on 17 May 1876, whose personnel trekked over nearly the entire territory of the archipelago for the ensuing eight years, studying and charting the vegetation of the various zones and regions of the archipelago. The fruits of these labours were published as *Sinopsis de Familias y Generos de Plantas Leñosas de Filipinas: Introducción á la Flora Forestal del Archipiélago Filipino*, while the Commission’s statistical component drew up detailed maps of the islands’ forest cover that unfortunately were lost in the fire of 1897.⁶⁶

The royal order of 15 November 1881 substantially increasing staff numbers heralds in Jordana y Morera’s third phase. The service was re-organised and provincial offices created, one each for northern, central and southern Luzon and another for the Visayas and Mindanao.⁶⁷ A definitive set of forestry regulations, first proposed in May 1880 but

⁶³ Ibid., pp. 241-242.

⁶⁴ Ibid., p. 248.

⁶⁵ Vidal y Soler, *Memoria de la Colección* cit.

⁶⁶ Vidal y Soler, *Sinopsis de Familias* cit.; García, *Brief Review* cit., pp. 10-11. García claims copies of these maps were sent to the “Colonial Ministry”, presumably the Ministerio de Ultramar but I have not been able to locate them as yet. He also published in 1883 a *Synopsis of Family and Genera of the Philippine Tree Species* that reputedly contained an atlas of one hundred plates and a thousand drawings – also unseen by author.

⁶⁷ Jordana y Morera, *Estudio Forestal* cit., p. 260.

deferred due to the major earthquake of that year, was finally promulgated by royal decree of 13 November 1884. In many respects, the new law only ratified existing practices on timber classifications and charges but also stipulated that future forestry decrees, orders and circulars had to conform to its 138 regulations.⁶⁸ The ensuing boom in state land sales and the demand to legitimatise fields already brought under cultivation proved more than even this expanded service could handle.⁶⁹ Matters were only aggravated by the staff reductions instituted in 1886, presumably as a cost saving measure, though the reasons behind these cutbacks remain unclear. So protracted did the subsequent legal adjudication of public lands become that it caused a virtual “paralysis of administrative functions”, bringing the work of the service to a virtual standstill between 1887 and 1888.⁷⁰

The service continued to operate right up until the end of the Spanish colonial period though its effectiveness was hampered by its reduced number of employees. Unfortunately, its historical legacy has suffered much from the fire of 1897 that destroyed its extensive library, maps demarcating forest zones for the entire archipelago, its natural history collection, and the archives containing records on the sale and adjustment of lands.⁷¹ This blaze has ensured that the achievements and successes of the *Inspección general de Montes* have largely gone unrecorded and its effectiveness been greatly underestimated. However, some measure of its staff’s dedication can be gleaned from the fate of its chief functionaries who either died in service or were forced to retire due to ill health: Juan González de Valdéz died in office July 1871; Sebastián Vidal y Soler, forced to return home for ill health in 1873 only to return and die in July 1889; Ramón Jordana y Morera returned to Spain in 1881 “on account of sickness”; Luis de la Escosura y Coronel died from illness in May 1884; Salvador Ceron who left “on account of sickness”; and Juan Guillelmi who retired due to “broken health”.⁷²

⁶⁸ Ibid., pp. 238, 254-255; Nano, “Brief History” cit., p. 19.

⁶⁹ Jordana y Morera, *Estudio Forestal* cit., p. 266.

⁷⁰ Ibid., pp. 234, 264.

⁷¹ García, *Brief Review* cit., pp. 5-6.

⁷² Jordana y Morera, *Estudio Forestal* cit., pp. 239, 266; García, *Brief Review* cit., pp. 3, 5. Salvador Ceron according to Nano. Nano, “Brief History” cit., p. 18.

A month in the life

3-4 July. Leaving the history of the service, it is time to return to Salud and his duties during July 1882. The first entry in his log details how a report about illegal loggers prompted him to institute a search for them on Monday the third and Tuesday the fourth. He discovered a cabin built by Chinese who lacked the necessary permits required for cutting timber. The new commercialism of the second half of the century encouraged all sorts of people to seek their fortunes in the forest, especially after the 1863 earthquake meant that “the profit a timber merchant [now] makes is not insignificant”.⁷³ A memorandum of 24 February 1865 submitted to the Governor-General by the chief forester complained of illegal activities and “painted in vivid colours the deplorable situation of the forest and the immense harm being done to it”.⁷⁴ Despite the low price set by the state for the sale of timber, illegal logging remained rampant as there were insufficient guards to patrol the forest.⁷⁵ The situation in 1882 was little better.

Under the laws of the Indies confirmed by subsequent legislation, local people were permitted to cut wood for their own use, for both construction and firewood.⁷⁶ As the price of timber rose, however, so did the temptation to cut more than was needed for sale on the open market.⁷⁷ Various attempts were made to clarify what constituted one’s own needs. A circular issued by the forest district of North Luzon on 12 December 1883 defined such usages as *primeras necesidades* and specified shelter and fashioning the items necessary to facilitate work.⁷⁸ There were still many grey areas, though, where the unscrupulous “using the shade of the regulation” might “commit abuses”. The circular, for instance, drew attention to the size of houses, remarking that it “would not be just nor equitable if those who wish to have a big house did not have to pay

⁷³ Jordana y Morera, *Memoria sobre el Comercio* cit., p. 13.

⁷⁴ Jordana y Morera, *Estudio Forestal* cit., p. 230.

⁷⁵ Vidal y Soler, *Memoria sobre el Ramo* cit., p. 31.

⁷⁶ *Ibid.*, p. 66.

⁷⁷ Jordana y Morera, *Estudio Forestal* cit., p. 232.

⁷⁸ Circular of the Forestry District of North Luzon issued by Gabriel Olivas, 12 December 1883, PNA, Corte de Maderas, Bundle 5.

the state for the wood used since then the exemption [*gracia*] conceded would favour the rich much more than the poor”. Clearly, there were difficulties in determining what constituted the right amount of wood for the “construction of a regular house” and the frequency – another potential loophole – with which it needed to be replaced. The circular suggested that all such cases be referred to the district engineer for determination. At the same time, officials were anxious not to apply the rules too officiously and so deny legitimate demands for wood. The following year, the chief regional forest engineer admonished his assistant in Cagayan for permitting staff to charge for timber used in houses already constructed as he was concerned that it caused much public annoyance and brought the forest service into bad repute.⁷⁹

The rising price of timber also encouraged a more “professional” class of illegal logger. How much wood was cut is difficult to estimate but the forestry department assessed the value of untaxed timber collected annually by people ostensibly for their own use at 300,000 pesos in the 1880s, more than half of which had been cut fraudulently. This sum is equivalent to nearly one and a half times the total revenue of 102,712 pesos generated by the *Inspección general de Montes* from wood in the financial year of 1889-1890.⁸⁰ Most offenders acted with relative impunity. The continuing shortage of forestry staff meant enforcement had to be mainly entrusted to the local police force, the *cuervo de carabineros*, who lacked any incentive to implement the law.⁸¹

The extent to which Chinese were responsible for all this illegal logging is unclear but there were many allegations to that effect. Spaniards like other Europeans at the time, both in settler (USA, Canada, Australia) and extractive (Netherlands East Indies and Cochin-china) colonies were in the grip of a xenophobia that decried all Chinese as corrupt, depraved and constituting “a serious danger to the political order”. Jordana y Morera charged them with being only interested in self-

⁷⁹ Gabriel Olivas (Ingeniero Jefe) to Ayudante del Ramo of Cagayan, Manila, 2 October 1884, PNA, Corte de Maderas, Bundle 5.

⁸⁰ Jordana y Morera, *Estudio Forestal* cit., pp. 278-279.

⁸¹ Vidal y Soler, *Memoria sobre el Ramo* cit., p. 31; Jordana y Morera, *Estudio Forestal* cit., p. 288.

enrichment and blinded by ambition. He blamed them for “adulterating everything that passed through their hands – indigo, rice, coffee and tobacco – contributing in this way to the discredit of all things Filipino in the world market”.⁸² What is certain, though, is that Chinese were in the process of cornering the retail timber market in the archipelago during the later decades of the nineteenth century. As the trade became more lucrative and more specialised, Chinese merchants increasingly assumed a greater share of related businesses, prompted, too, no doubt, by what had become “an extensive export to China”.⁸³ Already by 1874, Domingo Vidal y Soler observed that now most of the timber yards in Tanduay, Santa Cruz and Echague were in Chinese hands, while his brother, Sebastián, remarked on their prominent role in the forest produce trade.⁸⁴ By the 1890s, there were at least nine important Chinese timber merchants mainly located on the Calle Lacoste in Manila and they had even formed their own business association, the *Ch'ung Ning She*. Chinese were also involved in other aspects of the trade, providing cordwood and charcoal for sale to sari-sari and other small stores.⁸⁵ Equally, they came to monopolise dressing timber, preferring to cut wood by hand as a waste saving measure.⁸⁶ It was the opinion of an American with 25 years logging experience in the islands, Thomas Collins, that “the Chinese pretty much run the wood yards”.⁸⁷

5-6 July. Entries for the next couple of days, 5-6 July, have Salud in the town of Panitan, a little inland from the provincial capital, Capiz

⁸² Vidal y Soler, *Memoria sobre el Ramo* cit., p. 87; Jordana y Morera, *Memoria sobre el Comercio* cit., p. 16.

⁸³ García, *Brief Review* cit., p. 1; E. Wickberg, *The Chinese in Philippine Life 1850-1898*, Yale University Press, New Haven and London 1965, p. 104.

⁸⁴ Vidal y Soler, *Memoria sobre el Ramo* cit., p. 87; Zialcita, Tinio, *Philippine Ancestral Houses* cit., p. 37.

⁸⁵ Wickberg, *The Chinese* cit., p. 104.

⁸⁶ Pinchot reports 50 per cent waste from traditional methods of making boards out of logs. G. Pinchot, *Philippine Islands*, Pinchot Papers, Box 640, File: *Philippine Islands*, Library of Congress, Washington D.C. 1902, pp. 110-111.

⁸⁷ T. Collins, “Testimony of Thomas Collins to the Philippine Commission, 12 May 1899”, in *Report of the Philippine Commission to the President*, Government Printing Office, Washington 1901, vol. 2, pp. 80, 83.

(present day Roxas City), to check on a consignment of timber belonging to Antonio Roxas. Unfortunately, he was unable to finish the task because of heavy rainfall, not unusual at this time of the year when rain-bearing cyclonic storms, often of typhoon strength, sweep in over the central and northern islands of the archipelago. These storms and the floods that so frequently accompanied them proved very destructive to wooden infrastructure and severely disrupted communications, washing away bridges and knocking down telegraph poles. To repair the damages required prodigious quantities of timber. Provincial governors often petitioned Manila for temporary exemptions on forest tariffs as long as the wood cut was used exclusively in reconstruction.⁸⁸ The first chief forester, González de Valdéz, even suggested setting aside special areas of woodland to this effect.⁸⁹

From its inception, the *Inspección general de Montes* was tasked with controlling the amount of wood cut, encouraging the logging of a wider variety of species, and promoting the spread of operations to new areas. After only two years of operations, in February 1865, the service sent a report to the Governor-general on the sorry state of forestry affairs – the unregulated logging, the needless waste, and the frequent frauds. It urged the adoption of “practical measures informed by science, wherever possible appropriate to the special conditions of the country”. An attempt was also made to rein in the power of provincial governors to grant permission to cut wood, a highly lucrative authority, without first seeking sanction from central government.⁹⁰ Eventually, a system of permits was introduced on 18 December 1867 that set out rules on logging and limited the amount of timber that could be taken. According to Vidal y Soler, prior regulations had been largely ineffective but were subsequently better enforced. However, there were still far too few trained personnel and the support services rendered by the local *cuervo de carabineros* were of questionable value.⁹¹ Better forest practice had to

⁸⁸ Circular, Distrito Forestal del Norte de Luzon, Tuguegerao, 12 December 1883, PNA, Corte de Maderas, Bundle 5.

⁸⁹ Jordana y Morera, *Estudio Forestal* cit., p. 233.

⁹⁰ *Ibid.*, pp. 231, 234.

⁹¹ Vidal y Soler, *Memoria sobre el Ramo* cit., p. 21; Jordana y Morera, *Estudio Forestal* cit., p. 238.

await an increase in service personnel and the enactment of the comprehensive forest laws on 13 November 1884. Among the latter's provisions were regulations that classified wood into five revenue groups and imposed an impost of ten percent on its assessed value.⁹²

Logging with or without a licence, however, continued apace as there were ample opportunities to circumvent the rules or simply ignore them. Penalties were imposed on those caught transgressing the regulations but these served more to fuel popular resentment than act as effective deterrents. A Royal Decree of 14 May 1880 imposed fines ranging from five per cent of the value of the wood trafficked illegally up to a limit of 200 pesos for a second or subsequent offence. Those made insolvent by such measures faced seizure of goods and imprisonment.⁹³ Valid permits were required even to fell trees on private property, a provision that generated considerable bitterness among landholders.⁹⁴ But the main source of antagonism was directed at the forestry service's attitudes towards swidden agriculture, *kaiñgin*, and those who practised it, *kaiñgineros*. Accusations that the practice was one of the prime causes of forest destruction were not particular to Spaniards (or Americans after them) but pervaded all colonial regimes.⁹⁵ The fire that was an integral phase of shifting agriculture was seen as enormously wasteful of valuable timber. The *Leyes de las Indias* originally subjected swidden agriculturists to only "mild rebuke" but the tone was very different by the late 19th century. Vidal y Soler blamed "the deplorable state" of much of the upland areas "in no small part" to the activities of *kaiñgineros* whose

⁹² Nano, "Brief History" cit., pp. 18-19. There is some ambiguity over the date these regulations were enacted. The main source on them is Jose Nano who in 1953 published a history of forestry in the Philippines while serving as a Senior Forester in the Republic of the Philippines' Bureau of Forestry. There is no real dispute over the content of the regulations but neither of the two more contemporary chroniclers, Ramón Jordana y Morera in his 1891 and 1894 publications, nor Regino García in his brief account of the Spanish forestry service written in 1903, make mention of that specific date. In fact, these laws may have been adopted piecemeal sometime between 1882 and 1888.

⁹³ Real Decreto de 14 May 1880, PNA, Corte de Maderas, Bundle 5.

⁹⁴ *Gaceta del Manila*, 30 Abril 1870, PNA, Corte de Maderas, Bundle 5.

⁹⁵ Williams, *Deforesting the Earth* cit, pp. 370-371, 402.

presence was everywhere revealed by the tell-tale smoke of their fires.⁹⁶ Jordana y Morera sang to much the same tune, accusing them of inflicting “great damages” on the forest.⁹⁷ Henceforth, shifting agriculturalists were to be “energetically pursued and punished”, fined and made to pay for the wood they cut and damaged.⁹⁸ Those who did not pay were to be imprisoned.⁹⁹ A law passed on 8 June 1874 apparently even tried to prohibit swidden cultivation altogether, though it not unexpectedly had little effect.¹⁰⁰ While *kaiñgin*-making remained in Spanish eyes a form of cultivation practised by “savage tribes or Moro farmers”, it was also often a prelude to more sedentary agriculture.¹⁰¹ Local village histories are full of accounts of how settlements began as exploratory probes by people who came to hunt and open temporary forest fields “and later applied their *kaiñgins* into homesteads”.¹⁰²

7-8 July. Salud was on the road a lot over the next few days, first visiting Dumarao, an old inland town to the south of the province, between 7 and 8 July, and then closer to the coast at Panay on the tenth of the month.¹⁰³ In all, he covered nearly 130 kilometres over four days. In both places, he was inspecting consignments of wood to ensure that only the specified amount of timber had been felled and the requisite tariffs levied. As personnel shortages meant that such inspections only occurred at regional centres, there were ample opportunities for unscrupulous traders to underestimate their consignments or evade imposts altogether. There are numerous accounts of concessionaires underreporting the value of the timber transported.

⁹⁶ Vidal y Soler, *Memoria sobre el Ramo* cit., pp. 21-22, 28.

⁹⁷ Jordana y Morera, *Estudio Forestal* cit., p. 232.

⁹⁸ Información sobre las Maderas Entregadas por los Pueblos de Isabela de Luzon a la Colonia Militar de Tumanini, 19 October 1877, PNA, Corte de Maderas, Bundle 3.

⁹⁹ Gobernador P. M. de la Provincia de Tarlac a la Dirección General de Administración Civil, Tarlac, 31 March 1890, PNA, Corte de Maderas, Bundle 5.

¹⁰⁰ Nano, “Brief History” cit., p. 16.

¹⁰¹ Jordana y Morera, “Memoria sobre la Producción” cit., January 1874, p. 1.

¹⁰² Historical Sketch of Santo Domingo Municipality, Barrio Alula, Historical Data Papers (hereafter HDP), Nueva Ecija Roll 47, p. 2.

¹⁰³ Panay is both the name of a municipality in the province of Capiz as well as that of the entire island.

On occasions, the difference in amounts may have been unintentional, the result of sloppy measurements such as when Esteban Rin, a resident of Manila, was found to have underreported the value of his cargo by 167 cubic feet.¹⁰⁴ The benefit of the doubt may even extend to the consignment belonging to Don Fernandez Chao whose launch *India* was found to be carrying 302 cubic feet more than declared on the ship's manifest.¹⁰⁵ No such uncertainty, though, surrounds the shipments borne by the brigantines *Librada* and *Julia* intercepted in May 1885 with underreported cargos of 805 and 1,060 cubic feet respectively.¹⁰⁶ Those unlucky enough to be apprehended in such activities were taxed on the excess timber and fined accordingly.

Outside of the merchants who controlled the large timber yards of Manila existed a much larger and more dispersed group of traders who sought the concessions and licences to supply wood to the capital and other urban centres. Some of these *contratistas* were evidently large scale enterprises. The Señores Viglietti y Compañía of Madrid unsuccessfully lobbied the Governor-general in 1878 for a thirty year contract to log the forests of various provinces in Luzon and surrounding islands, effectively demanding “though it does not use those words... the exclusive privilege to exploit the mountains of the Philippines”.¹⁰⁷ Most, however, were more humble endeavours with, commensurately, more modest ambitions, like the contractor Julian Andreas of Navotas granted nine licences to cut 195 beams (11,164 cubic feet) from the public forests of Bagac and Orion in 1888 or the Antonio Cesare whose consignments Salud inspected in Dumarao and Panay.¹⁰⁸ These

¹⁰⁴ Inspección general de Montes to Gobernador Civil de Manila, Manila, 12 September 1893, PNA, Corte de Maderas, Bundle 5.

¹⁰⁵ Inspección general de Montes to Gobernador Civil de Manila, Manila, 26 March 1894, PNA, Corte de Maderas, Bundle 5.

¹⁰⁶ Barrantes to Gobernador Civil de Manila, Manila, 25 May 1885, PNA, Corte de Maderas, Bundle 6.

¹⁰⁷ Sobre Concesión para el Corte de Maderas en los Montes Públicos de Varias Provincias de este Archipiélago que Solicitan los Señores Viglietti y Ca. de comercio de Madrid, Manila, 3 January 1878, PNA, Corte de Maderas, Bundle 6.

¹⁰⁸ Expediente sobre Aprovechamiento Ordinario de Maderas, Orion, 20 February 1888, PNA, Corte de Maderas, Bundle 8.

men were “professional” loggers in the sense that they engaged in this pursuit year after year: Men such as Doroteo Inocencio, a contractor who logged over 300 beams a year (13,000-17,000 cubic feet) in the late 1880s. Most of the trees he felled were lesser quality hardwoods but others were more value, like amugis and guijo.¹⁰⁹ Some of these provincial contractors were also Chinese, men such as Lorenzo Cheng-Guatco, resident of Moron who obtained 21 licences to cut 886 beams in 1887 or Manuel So-Tuico, resident of Binondo who solicited 14 licences to cut 547 beams in 1889.¹¹⁰ Most, however, were drawn from a wider variety of ethnic backgrounds, people who were quick to see the opportunities presented by an expanding timber market.

These *contratistas*, however, rarely went into the forests and, instead, placed their orders with provincial agents, *acopiadores*, who resided in towns close to the main logging areas. Jordana y Morera claims that these agents were often local functionaries, *cabezas de barangay* (village headmen) or *gobernadorcillos* (municipal mayors) who received advances to deliver a specified amount of wood to a particular location (usually a waterfront) by an agreed date.¹¹¹ The official standing of these *acopiadores* stood them in good stead as they, in turn, recruited foremen or *cabecillos* to hire labour gangs to actually do the work, usually on a piece-work basis called by the Chinese *paqueo*.¹¹² Local men found it difficult to escape these onerous duties, frequently being made to pay their tribute obligations in timber equivalents that did not reflect the true value of the logs. The resultant profits for the *acopiadores* were large, in the order of three to four times the value of the stated tribute. Otherwise, *cabe-*

¹⁰⁹ Expediente Aprovechamiento Ordinario de Maderas, Orion, 1 February 1888, PNA, Corte de Maderas, Bundle 6. Expediente sobre Aprovechamiento Ordinario de Maderas, Orion, 1889, PNA, Corte de Maderas, Bundle 7. A complete list of the species and the amounts felled by Don Inocencio is given in Bankoff, “Almost an Embarrassment” cit., p. 114.

¹¹⁰ Expediente sobre Aprovechamientos Ordinarios de Maderas, Bataan, June 1887, PNA, Corte de Maderas, Bundle 3. Expediente sobre Aprovechamiento Ordinario de Maderas, Orion, 1889, cit.

¹¹¹ Jordana y Morera, *Memoria sobre el Comercio* cit., p. 7.

¹¹² Wickberg, *The Chinese* cit., p. 104.

cillos were paid in accordance to a set schedule of timber prices plus an additional overhead of 50 to 100 per cent. From the scheduled price, they paid half to the axmen and the other half to the haulers and rafters, keeping the overhead for themselves. Some *contratistas* tried to cut out middlemen altogether and deal directly with work gangs, paying them an advance in coin or goods and the rest on delivery, or just buying logs at some riverine or coastal location. These practices, however, were unreliable from the merchant's or trader's perspective, subject to deception and delay, and so less frequently employed.¹¹³ Whatever the contract favoured, however, delivery was always specified at the waters' edge to ensure ease of collection.¹¹⁴

Logging was carried out by a system of selective cutting (*entresaca irregular*) with gangs roaming over vast stretches of forest felling the finest specimens they encountered without thought of extraction. Many prime logs were consequently left to rot where they fell.¹¹⁵ Waste was also endemic to the whole procedure with little care taken in either preparing the wood or maximising the yield from any one tree. An order for ten-metre beams, for example, usually resulted in logs of the desired diameter cut from the middle sections of the nearest forest giant, leaving an over-large stump. This practice was only compounded by erecting a cutting platform some three and a half metres above ground.¹¹⁶ Mature trees were always felled by axe. The handles of the axes frequently broke in the process. Trees were alternately cut from one side and then the other before finally felled in one direction, the adjacent area first being cleared of ground vegetation by machete.¹¹⁷ No provision was made to

¹¹³ Jordana y Morera, *Memoria sobre el Comercio* cit., pp. 7-8.

¹¹⁴ "Testimony of Adolph von Bosch to the Philippine Commission, Manila, 16 May 1899", in *Report of the Philippine Commission*, Government Printing Office, Washington 1901, vol. 2, p. 112.

¹¹⁵ Gifford Pinchot, during his brief visit to the islands briefly in 1902, commented on the destructiveness of the clear-felling practiced, reflecting on a barren patch of two to three acres, the work of the Philippine Development and Lumber Company in western Mindanao, that he had "never seen a more complete slash, because it is impossible to make one. Everything was destroyed". Pinchot, *Philippine Islands* cit., pp. 52-53, 56-57.

¹¹⁶ Jordana y Morera, *Memoria sobre el Comercio* cit., pp. 8-9.

reduce the damage caused to surrounding trees by their fall. Once on the ground, the trunk was worked on by the axmen who stripped away its canopy and branches and separated it into sections. If the logging site was close to a river, a crude chute might be constructed in a nearby ravine and the wood extracted that way. Otherwise, logs were hauled to the nearest waterway by carabao, the drivers using song as a means to control the animals. Small incisions were made in the frontend of each section and ropes attached, the under-surfaces “sniped” to remove protrusions, and friction minimized by the use of logs and short round rollers. Often it was necessary to hew rough “roadways” out of the forest. Over rocky ground only human muscle and a system of pulleys sufficed to extract the timber.¹¹⁸

Work gangs numbered about 50 people divided according to specialization. About half were axmen needed to cut down the trees. Another 20 odd were haulers who, along with their train of 30 carabaos, transported the roughly shaped logs to the nearest waterway. Finally some four or so raftsmen were employed to guide the timber downstream to the agreed upon delivery point. The nature of the work meant that actual logging was only carried out for about eight months in any year. The rest of the time was needed to locate trees of suitable dimension within the forest fastness and to rest heavily worked beasts lest they fall sick. River transport was dictated by water levels that had to be sufficiently high to allow the passage of logs, thus precluding the drier summer months. On large rivers or to cross short distances of open sea, huge rafts were constructed

¹¹⁷ Collins, “Testimony of Thomas Collins” cit., p. 82. These machetes are referred to as *boloc* or *itac* in Tagalog and *otac* or *binangon* in Visayan. They do not seem to be significantly different than the *bolo* currently employed in agricultural activities being described as 0.30 metres in length and 0.08 metres in width. Jordana y Morera, *Memoria sobre el Comerico* cit., p. 9

¹¹⁸ Jordana y Morera, *Memoria sobre el Comerico* cit., p. 10; Collins, “Testimony of Thomas Collins” cit., p. 82; Pinchot, *Philippine Islands* cit., pp. 52-53; G. Pinchot, Lecture on Forests and Forest Work in the Philippines, 16 March 1903, Yale Forest School, Pinchot Papers, Box 640, File: 1902, No. 9, Library of Congress, Washington D.C. 1903; W. Maule, Division of Forest Management, Forest District of Bataan and Zambales, Pinchot Papers, Box 587, File: Forestry, Philippine Islands, Reports, Library of Congress, Washington D.C. 1904.

comprising two hundred or more logs lashed together with lianas and cane.¹¹⁹ These had crews of up to 20 men housed in huts erected atop the logs who propelled the raft along by means of long poles and sails on voyages that might last two months. Small boats (*barotos*) acting as tugs provided a degree of steerage but the structural integrity of these crafts was never certain and many came apart as a result of strong winds, rough seas or simply the decomposition of the lianas.¹²⁰

A primary concern of *acopiadores* and *cabecillos* alike was to ensure that work gangs did not pocket the advances they had received and abscond into the forest before fulfilling their contract and delivering the logs to an agreed upon location. In fairness, this appears to have been a fairly commonplace practice. To safeguard their investments, agents and foremen resorted to hiring private guards who patrolled the logging sites and pursued runaways, tracking them down often with the help of paid informers to the most inaccessible hideaways.¹²¹ These guards were men known to be of bad repute “but who enjoyed a degree of standing and fear in the locality as a result of their misdeeds”.¹²² They were also handsomely remunerated for their services, receiving more money than the men who actually did the logging. Another ruse resorted to by work gangs, this time in collusion with the *cabecillo*, was to solicit advances from more than one agent or trader and then deliver the timber to the last who paid.¹²³ Despite such potentially profitable ruses, however, cutting down trees was always hard, dangerous work that involved living away from the comforts of home and family for extended periods.

¹¹⁹ One such stretch of open sea navigated in this manner was the 20 miles between the Gigantes Isles and the city of Iloilo on Panay.

¹²⁰ Jordana y Morera, *Memoria sobre el Comercio* cit., p. 11.

¹²¹ Similar sorts of guards were employed to prevent workers escaping from debt and miserable conditions on the sugar plantations of Negros. A. McCoy, “A Queen Dies Slowly: The Rise and Decline of Iloilo City”, in *Philippine Social History: Global Trade and Local Transformations*, A. McCoy, E. de Jesus (eds), Ateneo de Manila University Press, Quezon City 1982, p. 323.

¹²² Jordana y Morera, *Memoria sobre el Comercio* cit., p. 8.

¹²³ *Ibid.*, pp. 7-8.

Figure 1. An extract from the monthly forestry log of José Salud for 12 and 15 July 1882, Philippine National Archive, Corte de Maderas, Bundle 6

1 El día 12 y 15 respectivamente salí de la Cabeza para el pueblo de Pontevedra con el mismo fin que las anteriores y según aviso de D. Antonio Cesáre en los días citados se recorrieron dos partidas de maderas apropiadas en dicho punto. Dese por los pueblos de Santuyan y Paritán y aproximadamente puede apreciarse la distancia al pueblo de Pontevedra de veintinueve kilómetros que cubre ida y vuelta hacen en cada expedición un total de cincuenta y dos kilómetros.

12-15 July. Salud was on the road again, between 12 and 15 July, this time to Pontevedra, another coastal municipality and adjacent to Panay, once more to inspect consignments of wood destined for Antonio Cesare. All told, he completed a roundtrip of some 52 kilometres. Ownership of the vast forest wealth of the archipelago was vested in the colonial state who attempted to regulate its usage by granting logging concessions. However, some timber lands were held in private hands. The amount of such land was never great but arrangements had to be made with property holders before felling commenced.¹²⁴ Nor were the owners free to dispose of their own trees as they liked but like Bonifacio Rojas were forced to apply for a permit to cut and move timber.¹²⁵ But the main difficulty was not with private property but

¹²⁴ Collins, "Testimony of Thomas Collins" cit., p. 85.

¹²⁵ *Gaceta del Manila*, 30 de Abril 1870 cit.

with land that was held in common. Every municipality in the islands had rights to a certain area of forest from which to meet the needs of the community, the so-called *legua comunal*.

The *legua comunal* lies at the heart of many of the problems faced by the colonial government in imposing scientific forestry in the Philippines. Not only did forest conservation have to pay for its own management but the vast areas of crown land, the so-called *baldíos realengos*, were to be transformed from sterile “waste lands” into productive enterprises by means of private ownership. One of the prime tasks entrusted to the *Inspección general de Montes* was the sale of state lands. To achieve this end, though, the land had first to be classified according to its alienability (1873) and its quality (1883).¹²⁶ Unfortunately each *pueblo* (municipality) claimed communal lands whose extent was never fully clarified under colonial law. As early as 1797, the state had attempted to limit locals’ free access to lands, waters and pastures to those “immediately about the town”.¹²⁷ But the uncertainty remained and as soon as any proposal was made to sell land or start some agricultural or forestry project “it provoked a protest from local people, alleging that the said lands were within the *legua comunal*”. An initial attempt by the forestry service to resolve this matter on 10 January 1865 proved impractical to enforce. The 1873 regulations that tried to define alienability were based on the assumption that communal lands were already fixed. Those who tried to implement its provisions soon discovered that “every town considered all the surrounding lands as their *legua comunal*”. Far from being “an easy and quick” matter to determine, it was an intractable problem to solve: “The separation between state and communal lands that the regulations established did not exist in reality.”¹²⁸ The lack of clearly defined boundaries to-

¹²⁶ The 1873 regulations charged the forestry service with determining which lands were suitable for cultivation and those that should remain under tree cover for climatic or hydrological reasons. The 1883 regulations obliged the service to create a general inventory of land according to its quality, the first two categories of which were alienable and the third to be retained by the state to offer to indigenous farmers at nominal prices. Jordana y Morera, *Estudio Forestal* cit., pp. 242, 262.

¹²⁷ *Ibid.*, p. 245.

¹²⁸ *Ibid.*, p. 242.

gether with the conviction that the right to the free use of the forest had existed “since the earliest days of Spanish dominion” continued to plague forestry officials. As Jordana y Morera with his long experience in the archipelago wrote, the central question remained: “How to take away this custom without provoking a conflict of transcendental proportions?”¹²⁹ In the event, foresters were forced to maintain existing practices for another ten years and it was not until the regulations of 28 February 1883 that an attempt was made to delimit the *legua comunal*. Even then the wording proved ambiguous and the matter was only finally clarified by the Governor-general on 1 August 1883 as the equivalent of one square league of uncultivated land, though provision was made for an extension in the event of population increase.¹³⁰ Meantime, during the intervening years: “Many agricultural projects were aborted, involving Spanish and foreign capital, which would have contributed greatly to the wealth of the country.”¹³¹

Most attempts to restrict local usage and/or alienate forest lands were met with non-compliance, suspicion and opposition. Land sales were effectively paralysed at least until the reforms of 1889 as no one knew for sure what category the land they were trying to sell fell into, and it was “for certain that the town in whose jurisdiction this land is situated will always protest, giving rise to interminable questions that are impossible to resolve without the previous surveying of the *legua comunal*”.¹³² But resistance came not only from local people; officials, too, had their own reasons for opposing any limitations on their freedom to order events that ranged from empathy with their fellow townfolk to protection of their own, often fraudulent interests.¹³³ Surviving correspondence is full of admonishments to officials to do their duty and punish those beneath them who did not. Thus Salud’s

¹²⁹ Ibid., pp. 242-243.

¹³⁰ It was unclear under the 1882 regulations whether the extent of such communal land was 20,000 square feet or 1,552 square metres, “an area better suited to a field supporting a single household” or 40 million square feet equivalent to 3,104 hectares. One Spanish square league was 4,428.4 acres or 1,792.15 hectares.

¹³¹ Jordana y Morera, *Estudio Forestal* cit., pp. 234-235, 264.

¹³² Ibid., p. 263.

¹³³ Ibid., p. 244.

counterpart in Cagayan received a strongly worded directive from the chief regional forestry engineer on 2 April 1883 exhorting him to show no leniency in the enforcement of the regulations and to seek the support of provincial authorities in carrying out his responsibilities.¹³⁴ Evidently, this warning went unheeded. Three months later the same official was severely reprimanded for his failure to halt activities “prejudicial to the public purse” and charged to make urgent inquiries to uncover who was responsible for such goings-on. He was also reminded that proof of his collusion would lead to instant dismissal.¹³⁵ So rife were these attitudes among public officials that it quickly came to the attention of the Ministry of Ultramar who issued a circular that year lambasting officers for not performing their duties honestly and imposing severe disciplinary measures on those found guilty of engaging in this “deplorable corruption”.¹³⁶

Of course, there were exceptions, too: Men in the provincial administration that took their duties seriously and attempted to implement the new forestry regulations. In his *Memoria*, Vidal y Soler makes a point of mentioning some of these officials by name, praising them for their interest in forestry matters. Thus Don Luis de Taranco, the *Alcalde mayor* (governor) of Tayabas, is commended for the zeal with which he enforced the current regulations in a province on the forefront of the logging frontier at the time. Also Don Emilio Casanova and Señor Marzan, respectively the chief executives of Bataan and Nueva Ecija, are lauded for their attention to surveying the forests within their jurisdictions and their “prudent issuing” of logging permits. Special praise is reserved for the governors of Laguna and Abra: Vicencio del Rosario for his efforts in halting abuses, especially the illegal extraction of timber, and Señor Peñaredonda, the author of a plan for regularizing forestry activities within his

¹³⁴ P. Torres to Ayudante de Montes de Seccion de Cagayan, Manila, 2 April 1883, PNA, Corte de Maderas, Bundle 5.

¹³⁵ Gabriel Olivas to Ayudante del Ramo in Gataran, Cagayan, 14 July 1883, PNA, Corte de Maderas, Bundle 5.

¹³⁶ Gabriel Olivas to Ayudante del Ramo of Cagayan, Tuguegerao, 10 August 1883, PNA, Corte de Maderas, Bundle 5.

province, who was “well versed in agricultural and forestry matters” and always ready to raise his voice in “defence of the mountains”.¹³⁷ Vidal y Soler, however, was writing in the first flush of enthusiasm for the new service and perhaps the interest of such officials waned with the passing of years. Certainly, Jordan y Morera took a much more jaundiced view by the end of the century and after a long career in the service, concluding that many measures “remained in reality absolutely useless due to the disdain and little zeal with which municipal and provincial authorities enforced them”.¹³⁸ He went even further and complained of the lack of cooperation by most heads of provinces, who far from helping foresters often withheld support and even put obstacles in their way. To him, the *Inspección general* lived “in the midst of an asphyxiating atmosphere, it being truly a miracle that it had not already gone under”.¹³⁹

And the paperwork. Like all Spanish officials of the period, much of Salud’s time was spent sitting in an office dealing with administrative matters, filling out the associated forms, processing requests forwarded by provincial officials, and completing reports like the monthly one on his activities. He was engaged in this manner on the eleventh, thirteenth and fourteenth of July and then from the seventeenth till the end of the month. Given that he worked a six day week with only Sundays off, he devoted at least 14 out of 25 workdays in the month to paperwork and was only in the field for eleven.¹⁴⁰ This ratio gives us some indication of the importance of the more administrative side to his work and,

¹³⁷ Vidal y Soler, *Memoria sobre el Ramo* cit., pp. 139-140. On the moving logging frontier in the late nineteenth and early twentieth century, see: Bankoff, “One Island Too Many” cit.; G. Bankoff, “Breaking New Ground? Gifford Pinchot and the Birth of ‘Empire Forestry’ in the Philippines, 1900-1905”, in *Environment and History*, in the press.

¹³⁸ Jordana y Morera, *Estudio Forestal* cit., p. 244.

¹³⁹ *Ibid.*, p. 245.

¹⁴⁰ In fact, Salud was off-duty for six days, the first four Sundays of the month and then Tuesday the twenty-fifth and Monday the thirty-first. The days of the week for July 1883 were: Sunday 2, 9, 16, 23, 30; Monday 3, 10, 17, 24, 31; Tuesday 4, 11, 18, 25; Wednesday 5, 12, 19, 26; Thursday 6, 13, 20, 27; Friday 7, 14, 21, 28; Saturday 1, 8, 15, 22, 29.

perhaps, goes some way to explain why forestry officials found it so difficult to enforce the writ of the service throughout the forests under their care. Prior to the substantial increase in staff of 1881, the *Inspección general de Montes* had only 19 foresters with whom to cover forests equivalent in size to that of British India and exceeding that found on Java whose corresponding service had three times more personnel.¹⁴¹ Moreover, foresters in the Philippines were burdened with the responsibility of surveying the land in preparation for its public sale. Demand for the sale of land rose to a staggering 162,000 applications in 1882, effectively paralysing the whole process and bringing the fieldwork of assistant foresters to a near standstill.¹⁴² An examination of Salud's correspondence for the month reveals that he dealt with 11 requests to cut wood, issued five logging licences, approved five *cartas de pago* (receipts necessary to move wood), and collected 133.06 pesos in tax. Not surprisingly, the name of Antonio Cesare figures prominently in this paperwork confirming him along with Antonio Roxas as the main *contratistas* in Capiz. The two *cartas de pago* issued to Cesare amount to 61.23 pesos or nearly half the tax revenue collected for that month and together with those issued to Roxas accounted for 116.63 pesos or 88 per cent of the total. It is difficult to gauge just how onerous these administrative duties were but Jordana y Morera certainly felt that the task of the forester grew "harder and harder every day".¹⁴³

Conclusion

So the month of July 1882 drew to a close with Salud taking the last day off work even though it was a Monday. Nothing more is known about his subsequent career though many forest officers were recruited into the Insular Bureau of Forestry, the successor agency to the *Inspección general de Montes* under the Americans.¹⁴⁴ In fact, another district forester, Florencio Tamesis, who started his career in 1907 as a tempo-

¹⁴¹ Jordana y Morera, *Estudio Forestal* cit., pp. 224, 286.

¹⁴² *Ibid.*, pp. 234, 266.

¹⁴³ *Ibid.*, p. 247.

¹⁴⁴ Nano, "Brief History" cit., p. 22.

rary ranger went on to be appointed the first Filipino Director of the Bureau of Forestry in 1937. Salud probably never lived to see this day and, perhaps, did not even survive to witness the end of one forestry-regime and the commencement of another. The rigours of life spent in the forest with its associated dangers, not only physical but human, undoubtedly took their toll on the health of assistant foresters as they did on service heads.¹⁴⁵ Forests, too, became “the refuge of the disaffected” during the long revolutionary and independence struggles that engulfed the last years of the old century and the first ones of the next, making them places little conducive “for the peaceful work of a forest officer”.¹⁴⁶ Or, maybe, by 1900, Salud was old and had retired. Nor is it possible to determine how representative July 1882 was in the life of Salud or, for that matter, in the routine of the other 53 assistant foresters in the Philippines at the time.¹⁴⁷ The year 1882, however, and those immediately following it mark something of a high point in the history of the Spanish forestry service in the Philippines. It was the period when it had the most operatives in the field and was attempting to implement a comprehensive set of forestry practices, and it was before the slow decline and reduction of staff after 1886.

More than a snapshot of life for one among a class of professionally trained Filipinos who were beginning to emerge during the last decades of Spanish rule (and about which little is known), this “month in the life” provides clear evidence of the extent to which forestry in the Philippines at the end of the nineteenth century was already a well developed business guided, albeit problematically, by scientific practices. The growing demand for timber was instrumen-

¹⁴⁵ “The great and thick forest afforded a good place for robbers and outlaws to wait for their prey. The people were ambushed and robbed of their belongings when they passed through this place.” Victoria, Barrio Baculong, HDP, Tarlac Roll 72, p. 3.

¹⁴⁶ *XII Philippines* cit.

¹⁴⁷ With the increase in staff under the Royal Order of 11 October 1881, there were a total of 54 assistant foresters: Two assistant foresters, first class; four, second class; ten, third class; and 38 fourth class. García, *Brief Review* cit., p. 3. It is not clear what grade of assistant forester Salud was but given the relative unimportance of Capiz in forestry terms, he was probably in the fourth class.

tal in spawning an industry whose networks now stretched across the archipelago through a hierarchy of commercial relationships that extended from the timber yards in the city and large towns, out to the provincial *contratistas*, local *acopiadores* and *cabecillos* in charge of the labour gangs on the logging frontiers. Only at the “tree-face” were these relations not yet fully monetarized.¹⁴⁸ Nor can there be any doubt that the forest was an arena where the advocates of modernity and tradition, if not confronted one another, at least became fully cognizant of their divergent interests. As the colonial state projected its power into the green heartlands of the islands, attempting to incorporate and manage what was regarded by most as a free resource and by others as a sanctuary, scientific forest management came to be perceived more as part of the enclosure of the global commons rather than as the implementation of good practice and sound conservation.¹⁴⁹ Not, of course, that it was ever put in quite that fashion at the time but local people understood only too well that forest management was an attempt to alienate their lands and limit their rights – and they resisted it. The Americans were to encounter much the same problems in the new century.

And what about the forest itself, what state was the forest in by 1898? What were the results of thirty-five years of scientific forestry? Jordana y Morera does not paint an optimistic picture. The *Inspección general de Montes*, in his opinion, remained in the “stone-age” without the necessary personnel and powers to guarantee the conservation of the forest for the future. “The public forests”, he wrote, “will disappear rapidly or be reduced to a luxuriant mass of pretty aspect, but without any intrinsic value, suitable only to deceive the observer of little intelligence.”¹⁵⁰ We can only guess if José Salud would have agreed.

¹⁴⁸ On the labour market and its monetarization at the turn of the century, see G. Bankoff, “Wants, Wages and Workers: Laboring in the American Philippines, 1899-1908”, in *Pacific Historical Review*, 74, 1, 2005, pp. 59-86.

¹⁴⁹ On resistance to state forest management, see N. Peluso, *Rich Forests, Poor People: Resource Control and Resistance in Java*, University of California Press, Berkeley and Los Angeles 1992.

¹⁵⁰ Jordana y Morera, *Estudio Forestal* cit., p. 280.