

Systematic Forest Management In Myanmar During Colonial Period

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Abstract

This paper traces the development of forest management in Myanmar during colonial period. It gives information about the emergence of forest management in Myanmar to conserve forest and natural environment from the reign of Myanmar kings to colonial period. Forests had played an important role in the economy of Myanmar. Conservation of forests began since the reign of Myanmar kings. Forest management started in Konbaung period. Since 1752, teak trees were declared as royal property and royalties were levied for their extraction. However, scientific forest management began in 1856. Myanmar Selection felling system was also known as the Brandis Selection system because Dr. Dietrich Brandis who started the scientific forest management in 1856 formulated the yield regulation of teak trees and adopted the system. Prescribed girth limit, annual allowable cut and 30-year felling cycle are control measures to ensure harvesting timber in sustainable basis. Systematic forest management was easier by adopting rules and acts to form reserved forests. By reservation of forest, forest products could be systematically produced, natural environment and wild life could be conserved and forest products could be constantly obtained. Hence, the main purposes of this paper are to know the systematic forest management during colonial period in detail, and to understand the valuable existence of forest and systematic management for extraction of forest resources are most important benefits for the next generation.

Key words: Forest Management

Myanmar was included in the dense forest area of the world. In the period of Myanmar King teak was valued. It was widely used in palace building. Also wood was widely used in building rest house, monasteries and houses. In one of the Bagan inscriptions replantation of damage forest was found out. It was dated 3 February 1234. Ancient Shans and Myanmar limited their respective domains with forests. Forest products near the town had been levied tax. Otherwise Myanmar King did not know fully on economic role of forest sector till the early Konbaung period. But in the reign of King Alaungmintaya teak was royalized. Rather it was regarded as royal property. Logging of teak was formally forbidden. It meant forest management in Myanmar began in the reign of King Alaungmintaya. Only in the reign of king Badon teak became exported commodity. It was mentioned in his order of 21 April 1810. Timber production was systematized. Apart from using teak widely in ships building and measurement of timber was appeared as 'Bodawgyi Standard'. It meant timber business is in progress in the reign of King Badon. But in the reign of his successor, King Bagyidaw, Rakhine and Tanintharyi rich with valuable timber was handed over to the British as a result of defeat in war. The great loss was the grant of Mawlamyaing teak forest. Since that time historical change took place in forest history. Although the royal government had complete control of forests in Upper Myanmar, western license system began in Rakhine and Tanintharyi for the first time. The aim and object of reservation of forest was to maintain long lasting of forest for the benefit of privileged persons.¹

In 1826, large scale exploitation of Lower Myanmar forests by the British started. Between 1852 and 1855, the government introduced preliminary measures to regulate Pegu's teak forest. But the government did not prevent illicit extraction and destruction of forests. Lord Dahousie, the Governor General of India appointed Dietrich Brandis as Superintendent of Pegu forest in 1856 (See Photo 1). He was first forester to be employed by the British, and

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¹ *Thittaw Htarna Nyunchat-mya (Departmental Instructions of Forest)*, Vol. I, Rangoon, Sarpebeikman, 1955, p.20 (Henceforth: *Thittaw Htarna*, 1955)

he was not only an outstanding forester, but was also upright and honourable. He drafted the first forest Act, initiated the *taungya* system by which teak plantations were to be established, introduced the sustained yield management concept based on calculating future yield by employing linear valuation surveys and the drawing up to detail working plans for each forest Division. In 1856, the Forest Department was created to assert control over forest users a part of an attempt to manage Myanmar's commercial forests scientifically.²

Under D.Brandis, the new Superintendent, the following arrangement had been made for working them: tree to be killed and felled under direction of the forest officers, by contract with the inhabitants of the villages adjoining the forest; the timber to be dragged and floated to Yangon on the Government account, either by villager or others, as may be found that convenient, and by contract, at a fixed rate per tree, whenever such an arrangement could be made; periodical sales of the timber to be held on Government account at Yangon. According the arrangements D.Brandis tried to preserve of the forests from destruction by the hill tribes. Scientific forest management in Myanmar started in 1856. Forest rules first proclaimed in Pegu in October 1856, provided a framework within which the Forest Department could operate. Rules had been passed for the protection of teak trees and a system for conserving and extending teak forest was introduced; leases for extraction of timber were issued for a fixed term of years.³ So as to permit the introduction of scientific forest management in the Pegu teak forest. From 1856 onwards all teak in the forest whether felled or not, was considered to be the property of Government. In 1857, the Forest Department was established, the Selection System had been the sole silvicultural system practised in the management of natural forests. Under this system teak and other hardwoods were selected and felled at fixed girth sizes. The essence of the system was that management plans were drawn up for each forest management unit and the forests were managed fixing annual allowable cuts. Teak trees were selected breast height seven and a half feet and girdled in moist teak forests while in dry forest the girth limit was six and a half feet. The girdled trees were felled after three years. Similarly, other hardwoods were extracted according to girth limits fixed depending upon the locality. Mostly, the hardwoods were selected breast height four and a half feet.⁴ A few high-quality stems were retained as seed trees in order to ensure the regeneration in areas where seed bearers were scarce. Clear felling, simple coppice and coppice with standards systems were applied as required in the local supply forest reserves and fuel wood plantations. The Selection System prescribes a felling cycle of 30 years as each felling series designated for timber extraction in an area was divided into thirty smaller blocks of more or less equal productivity.⁵ One block was worked each year giving it a rest of thirty year between visits. All marketable trees which had attained exploitable girth were selected for cutting from one of thirty blocks of approximately equal yield capacity in felling series.

In 1858-59, the forest regions of British Burma, brought under regular administration, lie in the Pegu and Tanintharyi. The teak forest of Pegu and Tanintharyi were arranged in three grand divisions, marked out by the courses of the main rivers and their tributaries.⁶ These three grand divisions were Thanlwin, Sittaung and Ayeyawaddy. Each grand division was placed under the control of a Deputy Superintendent, and was sub-divided into sections which from convenient groups for working and watching the tracts where the trees grow.

² H. Robert Taylor, *The State in Burma*, London, 1987, p. 53 (Henceforth: Taylor, 1987)

³ *RAB, 1857-58*, 41

⁴ W.B. Tudd, *Sadoway District, Burma Gazetteer*, Vol.A, Yangon, Superintendent, Government Printing and Stationery, reprint, 1962, p.37 (Henceforth: Tudd, 1962)

⁵ Morehead, 1944, 22

⁶ *Report on the Administration of Burma for the year 1861-62*, Rangoon, Government Press, 1863, p. 33 (Henceforth: *RAB, 1861-62*)

Working plan was drawn and watching the tracts where the trees grow. The Forest Department was insufficient superior service and subordinate staff for forest administration. In 1858, Brandis sought trained foresters from Germany to establish the forest Department on professional basis. In 1861, the principal feature of administration had been the future development of the plan of working the forests by means of private enterprises, instead of by direct Government agency.

In 1864, Dr. Brandis held the post of Inspector-General of Forests for India. The creation of the Indian Forest Department in 1864 and Indian Forest Act was passed in 1865. Indian Forest Act (1865) was passed in Lower Myanmar and a complete new set of rules was drawn up under it. The forests were constituted into circles subdivided into divisions, each under the charge of Deputy Conservators. At this time, there were two circles Pegu and Taninthayi. Divisions were Tharyarwaddy, Pyay, Southern, Sittaung and Thanlwin. Of these the Sittaung Division was the largest comprising less than half of the total forest area while Tharyarwaddy came second and comprised fully one-fourth of the area. The area of the Tharyarwaddy forest division was 2,200 square miles and its boundaries were the Ayeyarwaddy on the west, the Pegu *Yoma* on the west, the south watershed of the Nawin on the north, and the south watershed to the Thronze on the south. The headquarters of the division were at Pyay and the division had about square miles of the reserved forest and a total area of about 800 square miles of forest land.⁷

According to the Forest Act 1865, reservation of forests began to constitute in Pegu and Tanintharyi Circle. In 1873, the Draft Forest Rules were drawn up under Act VII of 1865, these rules were for the better management of the government forests in British Burma.⁸ All Government forests which were maintained for the supply of timber and other forest produce or for the purposes of shade and protection, were called Forest reserves. In accordance with Draft Forest Rules of 1873, all Government British Forests were divided into three classes these were Ordinary reserves, Special reserves and District reserves. Ordinary reserves were those which were maintained primarily for the preservation of natural moisture, the retention of the soil on mountain ranges, and for protection against landslips; for the preservation of the banks of streams, rivers, and other waters, and for the maintenance of the water-supply there in; for the protection of land against shifting sands, and damage by flood and diluvian. They were in a secondary degree only intended for the supply of timber and other forest produce.

Special reserves were those which were maintained primarily for the production and yield of timber, wood, fuel, and other forest produce for the benefit of the state and the supply of the market, and further to fulfill the purpose of the ordinary reserves. They were subject to such special protection, and to provisions for their reproduction, treatment, and working, as were hereinafter prescribed, suitable to maintain them in the condition of the greatest and most beneficial permanent yield. District reserves were those which were maintained for the purpose following: (a) forests and plantations in the vicinity of towns and villages, and which, though they are property of government, were designed to supply timber, wood, fuel, and other forest produce for the use and convenience of the inhabitants of such towns and villages; (b) groves, plantations and avenues for ornament of shade in the vicinity of roads, public buildings and places of public resort, or for the maintenance of the banks of springs, streams, tanks, and other waters, and of the water-supply therein ; (c) plantations in course of formation by district authorities, designed, when grown up, either to form district reserves of the classes (a) or (b), or to be treated as special reserves.

⁷ Grantham, 1959, 66

⁸ Dr. Brandis, *Memorandum on the Forest Legislation*, Simla, Government Central Branch Press, 1875, p.75 (Henceforth: Brandis, 1875)

The administration and control of ordinary and special reserves was vested in the officers of the Forest Department. The administration and control of district reserves was vested in the civil and revenue authorities of districts. According to these 1873 rules, the valuable kinds of trees were prohibited girdling, felling, barking and burning in ordinary reserves without permission. These valuable kinds were teak (*Tectona grandis*), *thitka* (*Pentace Burmanica*), *thitkado* (*Cedrela Toona*), *thingan* (*Hopea odorata*), *yammanay* (*Gmelina arborea*), *thitse* (*melanorhoea usitatissima*), *kanyen* (*Dipterocarpus alata*), *thinwin* (*Rosewood*), *shaw* (*Sterculia*), *pyimma* (*Lagerstroemia*), *kokoh* (*Albizza Lebbek*), *pyingado* (*Xylia dalabriformis*), *padouk* (*Pterocarpus dalbergioides*), *sha* (*Acacia Catechu*), *eng* (*Dipterocarpus tuberculata*), *bambway* (*Careya arborea*), *yindeik* (*Dalbergia cultrata*) and *anan* (*Fagroea Fragens*).⁹ In these rules minor forest produce means and includes bark, leaves, grass, bamboos, wax, oil, resin, gum, varnish, honey, tusks, horns, and skins, seeds fruits, stones, lime, and every kind of forest produce except wood and timbers.

Sir.D. Brandis girdling scheme was adopted in 1880. Under guided by the Brandis, Myanmar Forest Department was systematically developed with scientific methods. Reserved Forests were growth to his endeavoured, everywhere it had had the valuable forests in Myanmar. The reserved area increased gradually at first, however reserves still covered 1410 square miles in 1878-79.¹⁰

In 1881 Forest Act, unauthorized access was prohibited, and damage to the forests was subject to a five hundred Rupees fine, six months imprisonment, or both. The 1881 Act restricted *taungya* within reserves and emphasized that shifting cultivation was not a right. The main goal in unclassed forest was to protect reserved species and regulate trade.

Forest Department had proceeded exploration, reservation, settlement and demarcation and finally the preparation of scientific working plans steadily in Lower Myanmar. The Government had power at anytime to take up valuable forest areas as forest reserves, whilst the exploitation of timber standing in unreserved forests was only permitted under lease or licence from the responsible authority. Since 1861, the government ordered to open the Lower Myanmar forest to European timber traders. But the Forest Department retained responsibility for tree selection and girdling.¹¹ Girdling was done by gazetted officers of the Forest Department and was carried out at 30 years intervals in any teak forest, the area to be girdled each year and the girth limits for girdling being prescribed in the working plan. The working plans were compiled for the long-term commercial teak extraction and reforestation work. The working plan was originally nothing more than a rough survey to facilitate immediate teak extraction. Girdling consists in cutting away a ring of bark and sapwood about two inches wide and an inch or more in depth around the base of the tree. Two to three years after girdling, trees gradually lose moisture and the timber becomes light to float, as a result the timber became partially seasoned before been removed from the forests.

Since 1853, the principal operations of the Forest Department were reservation and protection of the forests. In 1886, after the annexation of Upper Myanmar, all forests were soon brought under the control of the Forest Department and no tree could be felled except those girdled by its officers.¹² Most of the Upper Myanmar forests were leased to British companies or to British subjects, it was at least two years after the annexation before any real forest work could be done. Revenue was collected for a short time under the general orders issued by the Chief Commissioner on the 12th April 1886, and given the force of law by the

⁹ Brandis, 1875, 77

¹⁰ RFA, 1878-79, 8

¹¹ *Report on the Administration of Burma for the year 1861-62*, Rangoon, Government Printing, 1863, p. 35 (Henceforth: RAB, 1861-62)

¹² RAB, 1881-82, 41

Upper Burma Law Act.¹³ From the 15th August 1887, the Upper Burma Forest Regulation came into force and was supplemented by rules in relation to reserved forests, the disposal of timber and forest produce, the control of timber in transit, the collection and disposal of drift, stranded, and other timber, the impositions of penalties for forest offences and the powers to be exercised by forest officers. Under the Upper Burma Forest Regulation, the Upper Myanmar Forest administration was introduced on the model of that in Lower Myanmar. The territory was formed initially into one forest circle, but growing political stability led to between 1892-1900, Upper Myanmar was divided into a Western Circle which was extent the region to the west of Mandalay and an Eastern Circle which was the area to the south and north-east of Mandalay.¹⁴ Each under the charge of a conservator with headquarters at Mandalay. Forest reservation began in 1891 in Upper Myanmar. The pace of reservation in Upper Myanmar in the 1890s was its rapidity. In 1892-93, the Chindwin division was transformed into two Deputy Conservators' charges, the Upper and Lower Chindwin divisions, and three new subdivisions were constituted, namely, those of Paungbyin, Mingin and Gangaw.¹⁵

On the 30th June 1894 the total area of reserved forests in Upper Myanmar was 3977 square miles, of which 2176 were in the Eastern and 1801 square miles in the Western Circle.¹⁶ Additional forester were also posed to Upper Myanmar from sixteen officers in 1887-88, the superior service there totalled twenty-six men in July 1893.¹⁷ Reserved area in Upper Myanmar was increased year by year. Thus, whereas reserves in Upper Myanmar constituted 28 percent of the total reserved area in 1892-93, six year later they represented 51 percent. This record reflected the importance of Upper Myanmar teak forests and growing stability in forest administration in the region. In 1896 the forests were classified as either Reserved or Unclassed. The unclassified at the end of that year amounted to 9,200 square miles in the Eastern Circles and 13689 in the Western Circle.

The total area of reserved forests in Upper Myanmar on 30th June 1894 was thus 3977 square miles.¹⁸ Since the annexation of Upper Myanmar, British obtained a vast new forest estate. Under this condition, the Forest Department extended reserved forests in the whole of Myanmar. Forest officials continued to regulate selectively practices outside of reserves, but during the early twentieth century their attention turned increasingly to the inside reserves. Therefore the reserved forests were extended by the British government in the whole of Myanmar latter 1892.

The Forest Department carried out extension of forest reservation and plantation. Therefore, the total area of reserved forests was increased to 31637 square miles on 31st March 1940.¹⁹ Myanmar's forests had been sustainable managed through the working plans. Hence teak plantation area amounted to 113,000 acres in 1942. The result of the extension of forest reservation was easier for scientific forest management in Myanmar. By reservation of forests, forest products were constantly obtained and forest resources were available up to this day. Therefore, the forest Department carried out the reservation of forests in Myanmar.

¹³ J. George Scott, *Gazetteer of Upper Burma and the Shan States*, Part.I,Vol.II Rangoon, Government Printing, 1900, p. 307 (Henceforth: Scott, 1900)

¹⁴ *Report on the Administration of Burma for the year 1892-93*, Rangoon, Government Printing, 1894, p. 76 (Henceforth: RAB, 1892-93)

¹⁵ RAB, 1892-93, 76

¹⁶ Scott, 1900, 309

¹⁷ *Resolution, Report on the Forest Administration of Burma for the year 1887-88*, Rangoon, Government Printing, 1889, p. 1 (Henceforth: RFA, 1887-88)

¹⁸ *Report on the Forest Administration of Burma, 1893-94*, Rangoon, Government Printing, 1895, p. 6 (Henceforth: RFA, 1893-94)

¹⁹ *Report on the Forest Administration of Burma for the year 1940*, Rangoon, Government Printing, 1941, p. 7 (Henceforth: RFA, 1940)

The forest work so well founded by Dr. Brandis was carried on by successive generations of forest officers and the development and systematic organization of forestry in India and Myanmar over the period 1856 to 1881. In that period Dr. Brandis held the Post of Inspector-General of Forest for India. He established the first Forest Working Plan for Pegu. That plan set up the greater and more important type of forest, however the management was concerned namely in providing the greatest possible outturn of timber for commercial purposes and the revenue obtained was more favourable than with that of any other government department. Thus, the forest administration in British India was examined for the financial results. In 1881 teak and seven other species *padauk*, *thitka*, *thitkadao*, *thingan*, *kanyin*, *pyinkado*, and *kamaung* were declared reserved trees.²⁰

The relation between Forest and Civil authorities had always been intimate. On 15th October 1894 all forest administration was in the hands of Deputy Commissioners. On 25th March 1914 all civil officers were ex-officio forest officers; for some time previously most of them had done little but issue forest licenses. The government of the British Myanmar continued the creation of working plans according to the principle of 1902 Act. The effort expended on a plan was linked to the commercial value of its forests. The start of the First World War in 1914 halted field work²¹. The First World War ended in 1918 and the Working Plans of the Forest Department started activities in the year 1918-1919. The creation of working plans resumed in 1920 and special branch within the Forest Department was formed to direct this work. These plans provided systematic guidelines for non-teak extraction only beginning in the 1920s.

By the early 1920s Myanmar's forests were managed much more intensively than had been the case in the late nineteenth century. Fifty-six percent of the province of Myanmar was shown under forest, but reserved area was only 29933 square miles in 1920-21.²² Till 1921 Forest reservation policy had not changed much. Myanmar was separated from India and the Dyarchy rule was introduced on 1 January 1923. A separate Ministry of Forest was formed. Thus, in January 1923, Joseph A. Maung Gyi was chosen by Governor Harcourt Butler as the first Forest Minister. During 1924-25 was held by Yamethin U Pu and U Kyaw Din in December 1932 by replaced as Forest Minister in April 1934 by the veteran nationalist and leader of the Twenty-one Party U Ba Pe.²³

Under Dyarchy rule the most of the Myanmar forest staffs came into being between 1923 and 1925.²⁴ The working plans of the Reserved Forest temporary suspended in the Tharyarwaddy District and Shan States because of the Saya San rebelling in 1930 to 1933. In those period Saya San's headquarters was located in the Pegu *Yoma* east of the town of Tharyarwaddy, work in those forests came to a halt.

In February 1939, U Saw was appointed the Forests Minister.²⁵ Myanmar politics in the years 1937-42 was highly volatile and government was accordingly unstable. Thus, the Dr. Ba Maw government (1937-9) held power only at the sufferance of European and ethnic minority members in the House of Representatives. Near the end of the 1939, the Second World War broke out therefore the working plans of the Ministry of the forest were stop.

During the Second World War, the Japanese forces occupied the whole of Myanmar and the British forces retreated to India temporarily. During the Japanese occupation (1942-

²⁰ Smart, 1959, 129

²¹ Bryant, 1997, 108

²² *Review, Report on the Forest Administration of Burma for the year 1920-21*, Rangoon, Government Printing, 1922, p. 4 (Henceforth: *RFA, 1920-21*)

²³ Bryant, 1997, 132

²⁴ *Report on the Forest Administration of Burma, 1925*, Rangoon, Government Printing, p.6 (Henceforth: *RFA, 1925*)

²⁵ Bryant, 1997, 145

5), forest management was disrupted. On the one hand, the scientific forest administration became one of the most unpopular aspects of colonial rule. On the other hand, scientific forest administration of reservation managed to sustain yield of forests and wild life conservation.

Conclusion

Forests still play a vital role in the national economy. Forest sector had contributed to the national economy as a second foreign exchange carrier after Agricultural Sector. Actually half of Myanmar's territory was covered with forest land. Forests were not only important for national economy but also important for environmental conservation. In the royal order of King Alaungmintaya, dated 16 May 1758, it was found out that Kingtawwun had to collect timber-tax at Chuntaung. It meant the evidence of timber business. According to the royal order of 21 April 1810 forest production on commercial scale had been started in the reign of King Badon. King Badon had administered timber production by regimentation. Timber-measurement standard had also introduced during his reign. It was outstanding characteristic that ship-building with teak had been so extensive since King Badon's reign. Also in the reign of King Mindon timber production had been emphasised. Teak was regarded as royal monopoly.

Actually Myanmar timber production was not systematically administered since 1824 to 1852 when the British had annexed. Scientific management of forests area began only when Dr. Brandis was appointed as Forest Superintendent of Bago Division. By adopting India Forest Act (1865) systematic reservation of forest was encouraged. For proper administration four forest circles were constituted. In each circle working plan for timber production and silviculture were to be implemented.

After 1920 four circles of forests were extended to seven circles of forests. Working Plan Circle was separately constituted as a division. Mr. H.W.A. Waston acted as the first Planning Commissioner. Forest management was selection system of felling teak and other hard wood with restricted size of girth. Its essence was adopting Wording Plan by which each forest had to produce timber within limits. So as to give enough intervals each logging area had 30- years felling cycle and production was to be carried out in rotation in accordance with felling series. By regeneration the extracted area could produce timber continuously. In 1940 reserved forest area was extended to 31637 square miles. In 1948 it was extended to 34700 square mile and it covered 13.3% of the total area of the country. Actually reservation of forests played a vital role in long-lasting existence of forest and the existence of living creatures as well.

Photo (1)
Dr. Dietrich Brandis (1824-1907), Founder of Scientific Forestry in Myanmar

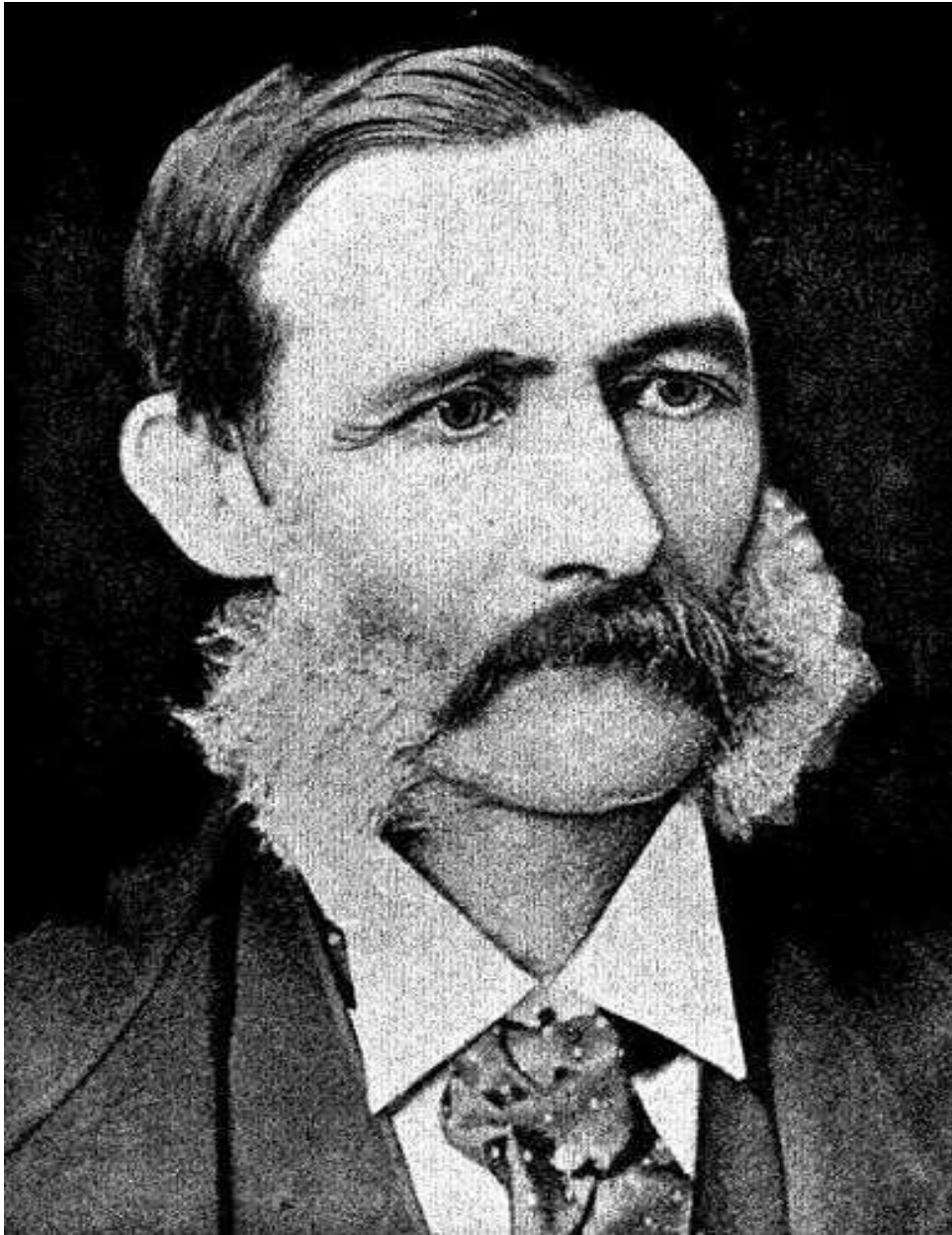


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