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La Commission d'enquête sur la pollution minière d'Ashio de 1897 et ses enjeux : du laissez-faire à la prise en main étatique d'une crise environnementale

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- 1 The mining town of Ashio, situated in the mountains of Tochigi Prefecture, has lent its name to one of Japan's first industrial pollution cases.¹ At the end of the nineteenth century, technological modernisation and the intensive exploitation of its copper deposits² caused serious damage to the environment in the north-east of the country: forests were cut down, toxic fumes were released and rivers poisoned, eventually leading to the contamination of agricultural land. At the height of the crisis, no less than five prefectures were affected. From 1890 on, the population of the area began to organise a protest movement which reached its peak at the turn of the century and continued, to varying degrees of intensity, until just before 1910.³ The protracted duration of this struggle, its diverse character, the strategic importance of the Ashio deposit – which had by that time become one of the country's leading copper suppliers

– and the severity of the damage, the consequences of which still persist today, make it a major ecological and social crisis of modern Japan.

- 2 While the existing historiography largely focuses on the protest movement, we choose to focus on one of the other key actors in the conflict, namely the government. Indeed, the role of the latter – especially during the years 1896 and 1897 when central authorities decided to become more involved after a decade of *laissez-faire*⁴ – has been little studied. Our aim is to understand how the central authorities negotiated the continuation of mining operations despite the high degree of contention that prevailed after the disaster reached such alarming proportions that it became impossible to ignore. In this regard, the establishment of a *Commission of Inquiry on the Ashio Mining Pollution* (Table 1) in March 1897 marked a major milestone.
- 3 While the work of the 1897 Commission has been described by historians as marking the beginning of government action – and even sometimes, more broadly speaking, as a significant step forward in the history of environmental protection – it has paradoxically been the subject of relatively few studies and generally discussed with little nuance.⁵ The provisions adopted by the government as a result of the Commission's deliberations did not solve the problem: while they continue to be held up as an instance of the government taking firm action against the operator,⁶ they were essentially a means of ensuring the continuation of mining operations and simultaneously suppressing the protest movement.⁷ We therefore consider it essential to revisit this critical juncture between the end of 1896 and the middle of 1897, with a closer reading of the discussions that took place among members of the Commission. The Commission was a temporary inter-ministerial body limited to an advisory role. However, a reading of its minutes⁸ reveals that its discussions were rife with tensions and confrontations which point to much broader issues than confronting the brand new centralised state, which was setting up its administrative structure and rapidly industrialising the country at the expense of the environment and therefore of agriculture. While environmental damage already existed before the Meiji period,⁹ pollution grew to an unprecedented scale with the development of industry and became more publicised, in particular through the case which interests us here. Incidents of this kind were not solely confined to Ashio,¹⁰ but analysing the government's action in this particular case reveals both how industrial pollution was addressed in modern times, and how a specific expertise in the management of environmental issues emerged.

1896 – Escalation of the conflict: the state forced to intervene

- 4 In 1896, a series of events forced the government to become more involved. On 21 July, 17 August and 8 September, severe flooding hit the Tochigi and Gunma prefectures. Water contamination then amplified the damage, which spread to the Saitama, Ibaraki and Chiba prefectures, as well as to the basin of the Edo River in the prefectural territory of Tokyo. The population, which had already staged protests in 1890, began to mobilise again. Faced with the inaction of local authorities, they organised "marches" (*oshidashi* 押出し) to the capital in order to voice their demands directly to the central authorities.

- 5 In contrast with previous years, the government could ill afford to sit idly. On November 11, 1896, the second cabinet of Matsukata Masayoshi 松方正義 (1835–1924) sent Sakano Hatsujirō 坂野初次郎 (1867–1903),¹¹ an agricultural engineer, to inspect the contaminated areas of the Gunma and Tochigi prefectures as well as the mine itself. In addition, the government asked the local authorities of the two prefectures for inquiry reports. On the basis of the information they gathered, the first “Special Commission of Inquiry on the Ashio Mining Pollution” (*Ashio dōzan kōdoku tokubetsu chōsa iin-kai* 足尾銅山鉞毒特別調査委員会) was established on December 22 under the Ministry of Agriculture and Commerce.¹² On December 25, the Commission handed minister Enomoto Takeaki 榎本武明 (1836–1908) a report (*tōshinsho* 答申書) which outlined the spill of “toxic substances” (*yūgai busshitsu* 有害物質) into the Watarase River as well as damage to agricultural lands. Until then, the measures adopted by the mine operator, Furukawa Ichibē 古河市兵衛 (1832–1903),¹³ had been limited to the installation of ore dust extractors¹⁴ and precipitation ponds in 1893. Recognising the inadequacy of these measures, the report called for improvements in the treatment of mine wastewater and in the storage of waste rock, sand and tailings to prevent these from being released into the surrounding waterways.
- 6 Interrupting mining operations was not, however, deemed necessary.¹⁵ The official point of view was that doing so would have no impact on contamination, in particular on the deposits at the bottom of the riverbed. The recommended solution was in essence a technical one, and the claim that preventive works would avert further damage was made on two occasions. The Special Commission suggested several countermeasures, such as lime disinfection or the excavation of contaminated soil, in a bid to recover arable land. In addition, it recommended reforestation and better river management, thereby acknowledging a link between the mining-induced deforestation and the floods. The report thus offered a comprehensive account of the situation. What’s more, it not only addressed the main pollution-related concerns, but also raised the issue of financial reparations: the operator, in addition to covering the construction costs of the proposed prevention works, would also be required to compensate the victims. Lastly, the Commission proposed that local authorities could act as intermediaries between the population and Furukawa, especially to determine the amount of compensation. The report demonstrates that, in 1896, the authorities were aware of both the extent and the specifics of the problem.
- 7 Why then did the government show such reluctance to intervene? First, we must keep in mind the importance of the mining sector. In the wake of the Meiji Revolution, when many of Japan’s mines became state property, the mining sector became the focus of special attention. Between 1870 and 1885, it was the second item on the list of ordinary expenditures of the Ministry of Industry after railways (respectively 31.5% and 49.9%).¹⁶ The government did not stop at developing the mining sector: in addition, it imported machinery, hired foreign engineers, encouraged training through vocational schools and promoted technological renewal. In the subsequent decades, production increased considerably: between 1874 and 1908, copper production multiplied by 20, silver production by 45, gold production by 54 and coal production by 72.¹⁷ Starting in the 1880s, the government began to implement large-scale privatisation of mining sites, with a view to reducing operating costs in particular. For instance, between 1882 and 1886, state-owned mines accounted for 47.2% of gold production, 30.9% of silver

production, 21.1% of coal production but only 2.9% of copper production.¹⁸ Copper mines were thus mainly run by private actors.

- 8 The Furukawa company quickly established itself as a heavyweight among the large corporations that had built their wealth on the exploitation of high-demand mineral resources. The Ashio mine, to which it had acquired the mining rights, was extremely productive and stood out as one of the pillars of Japan's copper supply. In 1876, the mine, which had been in operation since the seventeenth century, produced about 30 tons of copper and had an estimated annual deficit of 6,000 yen.¹⁹ Just a year after it changed operators, production had already gone up to 46 tons. However, the mine was still operating at a loss. Full profitability was only achieved in 1883, when the quantity of extracted ore slightly exceeded 645 tons. The discovery of rich mining veins between 1882 and 1884 marked the beginning of a new stage. In 1885, production grew to around 4,090 tons, nearly 90 times the production of 1877. In 1891, it rose to 7,500 tons. Subsequently, production stabilised at between 5,000 and 6,000 tons per year.²⁰ Thus, from 1884 until around 1904, Furukawa alone accounted for between 35 and 40% of national copper production, most of which was mined in Ashio (between 75% and 85% for this period).²¹ While copper was essential for the electrification of the country (cables, telegraph wires) as well as for the manufacture of ammunitions,²² it was mainly meant for export: between 1877 and 1897, the share of exports was about 67.5% of production. This share never dropped below 30%, both to maintain the trade balance and obtain foreign exchange which could, in turn, be used to purchase Western technologies.²³ Copper, the third leading export of Japan after raw silk and tea, accounted for 5% of the total value of exports.²⁴ As such, it acquired a strategic value in the development of the modern state and Japanese capitalism.
- 9 Furukawa had never been directly questioned. However, in December 1896, he received a “order” (*meirei* 命令) from the Ministry of Agriculture and Commerce, which ordered him to carry out preventive works without explicitly setting a deadline for completion. This order appears ultimately lenient in view of the many concerns raised in the report of the Special Commission, but what were its effects? If Furukawa’s memoir is to be believed, the mining industry immediately sprang into action,²⁵ rapidly building additional sedimentation ponds and setting up designated areas for spoil tips. The memoir does not, however, mention the completion date for these works. The actual effectiveness of this first package of measures thus remains in question, and it is in addition unclear whether the authorities followed up on the works, which does not appear to have been the case. Several months later, the investigations of the second Commission would reveal numerous instances of negligence on the part of the mine. This first ministerial order therefore produced only extremely limited results.
- 10 A few weeks later, the Diet investigated the matter again. On 26 February, Tochigi representative Tanaka Shōzō 田中正造 (1841–1913)²⁶ spoke out against inaction, noting that dust extractors were ineffective and that the pollution now affected five prefectures as well as part of Tokyo's territory.²⁷ What did the government intend to do? Tanaka, delivering the sort of scathing indictment that had become expected of him, criticized local authorities and accused them of favouring Furukawa. He called for further measures, putting forward the citizens’ right to “protection of life and property” (*seimei zaisan kenri* 生命財産権利). Once again, Tanaka invoked the defence of private property, which was protected by the Constitution, to demand assistance for

citizens deprived of their agricultural income. He concluded by referring to Article 19 of the “Law on Mining Activities” (*kōgyō jōrei* 鉱業条例) of 1 June 1892:

When prospecting or mining operations are detrimental to the public good, authorisations and concessions granted by the respective jurisdictions of the Chief Inspector of Mining for prospecting and of the Ministry of Agriculture and Commerce for mining may be withdrawn.

第一九条:試掘若ハ採掘ノ事業公益ニ害アルトキハ試掘ニ就テハ所轄鉱山監督署長採掘ニ就テハ農商務大臣既ニ與ヘタル認可若ハ特許ヲ取消スコトヲ得。²⁸

- 11 Despite the gravity of the situation, why did the government hesitate to take action in a case where the business activities of an individual had become detrimental to the public good (*kōeki* 公益)? Despite Tanaka raising this question twice, no answer was forthcoming until March 18, 1897,²⁹ when Enomoto and Home Minister Kabayama Sukenori 樺山資紀 (1837–1922) responded through a joint letter. As previously mentioned, amicable settlements had already been negotiated between Furukawa and the pollution victims in 1892, which were valid for a period of four years. As per the terms of this settlement, the victims had agreed to renounce all forms of protest in exchange for financial compensation. As these were civil law agreements (*minji* 民事), neither the government nor prefectural or district authorities had been involved. It is worth noting that, in their response, the two ministers emphasised the private nature of the conflict resolution process up to that point. They omitted to mention, however, the limited duration of these amicable settlements, which had expired in 1896. Moreover, the ministers claimed that pollution was a recurring phenomenon not limited to the case of Ashio, and that therefore this nuisance could be expected to occur elsewhere as well. They stressed the importance of developing the mining industry for the country’s economy and concluded that “appropriate measures will have to be taken to adopt policies that will take into account future conflicts between the mining industry and agriculture.”³⁰ This remark in itself testifies to the government’s recognition of a divergence of interests between the two sectors. The Ashio issue was thus played down by juxtaposing it against the broader goals of the country’s industrial development.
- 12 In their letter, the two ministers also referred to the preventive works undertaken by Furukawa following the December order. This allowed them to avoid commenting on the possible violation of article 19 of the Law on Mining Activities, since they were officially bound to wait for these installations to be commissioned in order to decide whether they were effective. Thus, this “response” (*tōben* 答辯) was in keeping with the government’s previous reticence to become involved. The provisions made by the government at the end of December 1896 hence enabled it to stall for time and temporarily placate the victims and the general public. However, the situation was beginning to change.

The 1897 Commission of Inquiry

- 13 The government instituted a new Commission of Inquiry on 24 March,³¹ just days after its response to the Diet. The protests were now sufficiently organised to maintain pressure on the authorities, in particular thanks to a “personal strategy”³² consisting in direct pleas to personalities with close ties to the leadership. Conservative politician and former Minister of Agriculture Tani Tateki 谷干城 (1837–1911) visited the region, encouraging Enomoto, then minister, to join him. Enomoto arrived there on March 23

and was struck by the gravity and extent of the damage, which was much more serious than described in the official reports. He immediately returned to the capital and persuaded the Minister of Foreign Affairs, Ōkuma Shigenobu 大隈重信 (1838–1922), that an intervention was needed. Events then started picking up momentum: on the very same day, a second protest march was organised. Several thousand demonstrators headed for Tokyo. This time, however, their intention was not to march to the Ministry of Agriculture and Commerce but to the headquarters of the Ministry of the Imperial Household.³³ While they failed to reach this destination, the prospect of the imperial family becoming involved certainly contributed to the government's decision to act. On 24 March 1897, a day after Enomoto's visit, the Cabinet met in an extraordinary session and, in keeping with its promise to the local population, established the Commission of Inquiry. Enomoto resigned on 29 March of the same year and was succeeded by Ōkuma as minister of Agriculture and Commerce, who thus came to hold two ministerial posts concurrently.

- 14 The Commission, whose role remained an advisory one, was made up of experts and directors of the offices concerned: it included Gotō Shinpei,³⁴ head of the Office of Hygiene of the Home Ministry, and Megata Tanetarō, head of the Tax Office of the Ministry of Finance, and was chaired by Kōmuchi Tomotsune, himself director of the Legislative Office of the Cabinet.³⁵ Of the fourteen members appointed between 24 and 26 March, many were agronomy experts, such as Sakano Hatsujirō, who had been dispatched to the area in the winter of 1896, and Nagaoka Muneyoshi. On 12 April, the Commission was expanded for the first time with the addition of Koizuka Ryū, director of the Mines Office. It was completed on 10 May by the arrival of one more expert, Irisawa Tatsukichi,³⁶ then assistant professor at the Faculty of Medicine of the Tokyo Imperial University, and ultimately comprised sixteen members in total.³⁷

Table 1. The inter-ministerial commission of 1897

INTER-MINISTERIAL COMMISSION (24 march–27 november 1897) Ashio dōzan kōdoku jiken chōsa iinkai 足尾銅山鉍毒事件調査委員会		
Member of the Commission	Date of appointment	Position
FURUICHI Kōi/ Kimitake 古市公威 (1854–1934)	24 March	Engineer-in-Chief of Public Works (<i>Doboku gikan</i> 土木技監) of the Home Ministry (Naimushō 内務省)
GOTŌ Shinpei 後藤新平 (1857–1929)	24 March	Hygiene Office Director (<i>Eisei kyokuchō</i> 衛生局長) of the Home Ministry
HAYAKAWA Tetsuji 早川 鉄治 (?–1941)	24 March	Secretary (<i>dajin hishokan</i> 大臣秘書官) of the Ministry of Agriculture and Commerce (Nōshōmushō 農商務省)
HOSOI Iwaya 細井岩弥 (1862–1937)	24 March	Engineer (<i>gishi</i> 技師) of the Ministry of Agriculture and Commerce
IRISAWA Tatsukichi 入沢 達吉 (1865–1938)	10 May	Assistant Professor (<i>jokyo</i> 助教授) of the Faculty of Medicine (Ika daigaku 医科大学)
KODERA Fujisarō 小寺房 次郎 (1870–1949)	24 March	Engineer of the Ministry of Agriculture and Commerce

KOIZUKA Ryū 肥塚龍 (1848–1920)	12 April	Director of the Mines Office (<i>Kōzan kyokuchō</i> 鉱山局長) of the Ministry of Agriculture and Commerce
KŌMUCHI Tomotsune 神鞭知常 (1848–1905)	24 March (President)	Director of the Legislative Office of the Cabinet (<i>Hōsei-kyoku chōkan</i> 法制局長官)
KOTŌ Bunjirō 小藤文次郎 (1856–1935)	26 March	Professor (<i>kyōju</i> 教授) of the Faculty of Natural Science (<i>Rika daigaku</i> 理科大学)
MEGATA Tanetarō 目賀田種太郎 (1853–1926)	24 March	Head of the Tax Office (<i>Shuzei kyokuchō</i> 主税局長) of the Ministry of Finance (<i>Ōkurashō</i> 大蔵省)
NAGAOKA Muneyoshi 長岡宗好 (1866–1907)	26 March	Assistant Professor at the Faculty of Agronomy (<i>Nōka daigaku</i> 農科大学)
ODA Makoto 織田一 (1864–1914)	26 March	Councillor (<i>sanjikan</i> 参事官) of the Ministry of Agriculture and Commerce
SAKANO Hatsujirō 坂野初次郎 (1867–1903)	24 March	Engineer of the experimental agricultural laboratory (<i>Nōji jikenjō</i> 農事試験場)
TSUBOI Jirō 坪井次郎 (1863–1903)	26 March	Professor of the Faculty of Medicine
WADA Kunijirō 和田国次郎 (1866–1941)	24 March	Engineer of the Ministry of Agriculture and Commerce
WATANABE Wataru 渡辺渡 (1857–1919)	26 March	Affiliate engineer in the office Imperial Affairs (<i>Hishoku gōryō kyoku</i> 非職御料局)

The issue at the heart of the debates: Should the mine be closed?

- 15 After a number of inspections, the Commission began its deliberations on 13 April with a view to submitting its recommendations to the government. President Kōmuchi immediately suggested the possibility of partially or totally halting mining activities and only resuming them when the preventive works were completed, stating that copper was after all a “product of national importance” (*taisetsu na kokusan* 大切ナ国産).³⁸ His views were met with strong opposition. The proposed text read as follows: “a temporary suspension of all or part of the activities of the Ashio mine [and] the study of a means to guarantee the complete and lasting implementation of the preventive works against pollution.”³⁹ But should the operator be required to suspend operations or implement these preventive measures at the outset? Support for the suspension, or even the closure of the mine, was far from unanimous. A debate took place around the Law on Mining Activities, and in particular article 59, which states:

In the event of a risk, or when damage to the general interest has been recognised, the head of mining surveillance must order the operator to take action to avert them or to stop mining activities.

鉱業上ニ危険ノ虞レアリ又ハ公益ヲ害スコ 認ムルトキハ所轄鉱山監督署長ハ鉱業人ニ其ノ予防ヲ命シ又ハ鉱業ヲ停止スヘシ。⁴⁰

- 16 The article does not state which of the two outlined measures took priority, leaving room for interpretation. Watanabe Wataru defended the first measure and suggested

setting a deadline for the works; if the operator did not carry out the directive in time, operations may be suspended.⁴¹ Since installations had already begun being put in place after the December 1896 order⁴², he considered that a suspension would be “punitive” (*chōbatsuteki* 懲罰的).⁴³ He further stated that it was important to move past an agro-centric view and start taking the needs of the mining industry into account like in Europe: “Today, we can no longer say that agriculture is the foundation of the nation.”⁴⁴ This criticism of agrarianism was clearly aimed at Kōmuchi, who was close to this political current. Kōmuchi replied: “Japanese agriculture is probably quite different from European agriculture. You claim that agriculture is no longer the foundation of the nation, but in reality, this is still largely the case.”⁴⁵ We can thus see that a deep ideological divide existed within the Commission from the outset. During the third session, on April 15, Nagaoka reminded the Commission of the concerns of the population and proposed several technical interventions, in particular improvements in ore washing, one of the main sources of pollution. These would have little effect on the operations of the mine. Furuichi, for his part, was convinced that it was possible to sufficiently protect the area against pollution without closing the mine.⁴⁶ Sakano shared Nagaoka’s point of view, and stressed that:

[To] leave things in their current state until preventive works are carried out would be an abdication of our sense of benevolence and justice [towards the people]. Especially if the poison continues to spill out, even in the event that there is no link [between the toxic discharge and agricultural damage].⁴⁷

- 17 Nagaoka went further: “Watanabe only talks about the mine and does not show the slightest consideration for agriculture.”⁴⁸ However, when it came to a vote, the line advocated by Watanabe with the support of Gotō and Furuichi was accepted by the majority (with eight votes out of the twelve members present that day). Even Koizuka, Tanaka's fellow party member and co-signatory of the questions raised to the Diet on 26 February 1897, eventually rallied behind it. In the end, the passage under discussion took the following form:

1. Determine a date for the study and implementation of means to guarantee the comprehensive and lasting implementation of preventive works aimed at protecting against mining pollution and toxic fumes. In addition, if necessary, order direct inspections by the authorities at the cost of the mining operator, or discontinue mining activities.

一期日ヲ指定シテ銻毒及煙害ノ防備ヲ完全ニ且永久ニ保持スヘキ方法ヲ講究実施セシムルコト、且必要ナル場合ニ於テハ官ニ於テ直ニ之ヲ実檢シ其費用ヲ銻業人ニ負担セシメ若ハ銻業ヲ停止セシムルコト。⁴⁹

- 18 By 15 April, the possibility of closing the mine as demanded by the protesters had become considerably more remote. However, the debate over this fundamental issue was soon to pick up again. On 12 May, during the penultimate session, Sakano and Nagaoka put forward an “urgent motion” (*kinkyū dōgi* 緊急動議) on the basis of new analyses that had brought them face to face with “a truth that could not remain unsaid”.⁵⁰ In additional analyses carried out on the site, the two members of the Commission had found a number of complications: the water escaping from abandoned mineshafts was scarce and only weakly acidic, unlike the water coming from active mineshafts. The volume of the spoil tips far exceeded the estimates and they were being dumped into the river in such quantities that they completely obscured the bottom. Sandy mud was being disposed of onto the banks of the river and, when it rained, this released toxic elements into the stream.⁵¹ River water downstream of the Kodaki 小瀧 refining station was contaminated and contained high levels of copper.⁵²

All these issues had been concealed by mine operators: Nagaoka and Sakano claimed to have encountered blatant signs of obstruction and cover-up while on location. When they attempted to collect samples, “mine workers wilfully hid the water discharge points and drastically reduced the flow.”⁵³ Moreover, lime had not been added to the wastewater as it was evacuated despite the procedure being recommended in the order of 1896. Since the operator’s lack of rigor was now evident, Nagaoka and Sakano called for the partial or complete suspension of mining activities until the completion of preventive works.

- 19 Their motion was the subject of fierce attacks: Wada Kunijirō accused Sakano of putting forward exaggerated and ludicrous examples,⁵⁴ Koizuka continued to extol the effectiveness of prevention works and Gotō declared that suspending mining activities on the basis of mere assumptions could not be justified.⁵⁵ The debate became heated but, in the final vote, Sakano and Nagaoka’s resolution only obtained four votes out of the twelve members present. Despite being backed by recent analyses, this last attempt to stop mining operations failed. Nevertheless, it had some effect: on 13 May, the day after the tumultuous meeting, a second order was sent to Furukawa. He was required to undertake a series of measures pertaining to the removal of debris, the equipment for automatic lime addition to the wastewater and the transfer and storage of waste rock and sediments, with specific references to the sites concerned and the various interventions required.⁵⁶ Since this order exactly reflected the concerns raised the day before by Sakano and Nagaoka, one could be led to believe that the government was finally adopting more stringent measures. However, the text was extremely short – there were only four points – and, like the first order of December 1896, it was only insufficiently binding. To fully understand the issues at play on 12 May, it is important to keep in mind that the addition of professor Irisawa to the Commission two days earlier owed little to chance. The last appointment before it – that of Koizuka – dated back to the previous month, more exactly to 13 April. The Ministry of Agriculture and Commerce, upon learning of Sakano and Nagaoka’s visit to the mine, manoeuvred to prevent the Commission from resuming the discussion on the closure of the mine, hurriedly appointing Irisawa. Supported by Gotō, Irisawa played a decisive role in the last session which endorsed the adoption of less stringent measures against Furukawa.
- 20 On 18 May, the three Commission members with medical training, Irisawa, Gotō and Tsuboi Jirō, presented their research report, which stated that, in their view, pollution had no direct effect on the human body. The same day, they sent the Cabinet a written report (*jōshinsho* 上申書) in which they proposed to find a way to prevent the pollution of rivers, while expressing their reservations on the need for preventive works. Gotō, who had on several occasions expressed his strong opposition to the suspension of mining operations, re-affirmed his position in the session of 12 May. The report (*fukumeisho* 復命書) which he presented to the Cabinet a few months later, on 14 October 1897, partly reflected his presentation of 18 May.
- 21 We must bear in mind that members of the Commission were not independent experts but, for the most part, civil servants. This makes reconstructing the arguments of those defending the mine and examining the evidence they provided even more important. For instance, let us look at the personal “investigative report” (*chōsa hōkokusho* 調査報告書) that Gotō attached to his October report: the results he presented pose at least two problems.⁵⁷ The first issue was with the samples taken for analyses (urine and stool, well water). These samples had already been called into question by an article

published in the *Yomiuri shinbun* 讀賣新聞 in April. Titled "The Samples of Hygiene Office Director Gotō are Worthless",⁵⁸ the article quotes a physician who had performed studies on the contaminated land. According to him, the samples being debated were collected from peasants of the upper strata who consumed foods produced elsewhere and which could not therefore be considered representative of the state of health of the larger local population. The same held true for well water, which would have been filtered and purified before consumption. Gotō was likely aware of these issues, but did not provide an answer, either in his briefing of 18 May or in the October report.

- 22 The second issue concerned the claim that pollution did not directly harm human health. One piece of statistical data contradicted this statement – the percentage of young men from Tochigi and Gunma prefectures failing the medical examination for military service. The overall failure rates of the two prefectures were practically the same as the national average, if not slightly lower than the rest of the country. Looking at the data from a district and city standpoint, however, a clear difference was visible in the disaster areas, which appeared to have a higher rejection rate. In the last session held on 18 May, Gotō announced that he was gathering material with a view to explaining the reasons for these military examination failures but did not provide a clear answer.
- 23 Gotō's reports were based on research conducted by Irisawa, who was sent to the scene following news of the inspections by Sakano and Nagaoka.⁵⁹ The results obtained by the assistant professor therefore held considerable weight. It turned out, however, that Irisawa had significant links to the Ashio mine. He was close to Konda Bunjirō 昆田文次郎 (1862–1927), a former legal advisor and vice-manager of the mine. Bunjirō had held the position since the beginning of 1897 and had been tasked with handling relations with the political leadership.⁶⁰ By choosing Irisawa to conduct the analysis, the Agriculture and Commerce Ministry already knew they were unlikely to receive a scathing report against the mine.
- 24 The ministry was also active at other levels of governance. On April 26, a Select Committee comprising six civil servants was set up⁶¹ with vice-minister Ōishi Masami as the president. He was joined by Takahashi Takuya and Fujita Shirō, respectively directors of the Forestry and Agricultural Affairs Offices, and by three members of the Inter-ministerial Commission (Koizuka, Oda Makoto and Hayakawa Tetsuji).⁶² On the same day, the ministry appointed one of its officials, Hotta Rentarō 堀田連太郎 (1857–1915), to draw up a draft of the projected measures against the mine. This text became the third order of 27 May 1897. While members of the Commission had been aware of the existence of a Select Committee since 28 April,⁶³ they did not seem to know of anyone else working on a draft for the future order. Hotta attended the last session of the Commission on 18 May, during which members asked him whether his version took their recommendations into account. Hotta defended himself by stating that his text "was composed on the basis of recent Commission decisions, complies with its basic framework and was prepared following its template; and that, ultimately, the detailed provisions were now within the authority of the Minister".⁶⁴ By this, he indicated to Commission members that the drafting of the order was not (or no longer) within their purview. At any rate, President Kōmuchi did not seem to appreciate this change: "if the draft did not have to go through a Cabinet meeting or if it had not reached my hands, I could have been unaware of its existence",⁶⁵ he remarked, adding that he thought it desirable to hold an urgent meeting of Commission members.

Table 2. The select committee of april 1897

SELECT COMMITTEE (26 APRIL 1897) <i>Ko-doku cho-sa iinkai</i> 鉞毒調査委員会			
Committee member	Date of appointment	Position	Notes
FUJITA Shirō 藤田 四郎 (1861–1934)	26 April	Director of the Agricultural Affairs Office (<i>No-mu kyokuchō</i> 農務局長) of the Ministry of Agriculture and Commerce	
HAYAKAWA Tetsuji	24 March	See table 1	Member of the Inter-ministerial Commission
KOIZUKA Ryū	12 April	See table 1	Member of the Inter-ministerial Commission
ODA Makoto	26 March	See table 1	Member of the Inter-ministerial Commission
ŌISHI Masami 大石 正巳 (1855–1935)	26 April	Vice-minister (<i>jikan</i> 次官), Ministry of Agriculture and Commerce	Chair of the Select Committee
TAKAHASHI Takuya 高橋琢也 (1848–1935)	26 April	Director of the Forest Office (<i>Sanrin kyokuchō</i> 山林局長) of the Ministry of Agriculture and Commerce	

- 25 Ultimately, then, the government order was not drafted by the Inter-ministerial Commission. The members of the Commission only had the chance to read it because Kōmuchi received the draft as director of the Legislative Office and, above all, because he took it upon himself to bring it up during the session. One can only be surprised that the specially established Commission not only had no role to play in the drafting of the document but had no say whatsoever in it. Not content with merely creating a Select Committee which overlapped with the Inter-ministerial Commission, the Ministry of Agriculture and Commerce also relieved the latter of its power to act and kept it ignorant of its final provisions.

Compensation at the expense of the State

- 26 In addition to the possible closure of the mine, the other major issue discussed by the Commission was that of compensation. From 26 April onwards, this became a key focus of the sessions.⁶⁶ A few days earlier, on 21 April, some of the protesters had gathered and expressed their determination to seek justice. They stated to *Tochigi's Journal* (*Tochigi shinbun* 栃木新聞) that “if the discussions of the Commission of Inquiry should in any way, as rumours claim, not lead to the closure of the mine, then all the victims will try to make their way to the capital, determined to die.”⁶⁷ According to the newspaper, volunteers from Ōra 邑楽 district (Gunma) had already formed a “dare-to-die commando force” (*kesshitai* 決死隊) of more than fifty people. Around the same

time, similar movements were taking shape in Ashikaga 足利 and Aso 安蘇 (Tochigi). Under the pressure of these movements, Commission members had to discuss possible means of compensation. Soon enough, they began considering “tax exemptions” (*menso shobun* 免租処分) for this purpose, an option made possible by the “legislation on property tax” (*chiso jōrei* 地租条例).⁶⁸

- 27 Megata, the director of the Tax Office, reminded other members that the Ministry of Finance could provide tax relief when agricultural land became either “uncultivable land” (*arechi* 荒地) following a natural disaster, or unfit for agriculture and/or barren.⁶⁹ For a landowner to benefit from these exemptions, his land had to be officially designated as belonging to these categories. Article 20 of the Property Tax, which stated that “from the year of occurrence of damage and for a duration of ten years, uncultivable land is exempt from tax. At the end of this period, the original value of the land will be restored”,⁷⁰ could then be applied. The debate focussed on how the land should be reclassified. According to Megata's explanation, “land is considered unsuitable for cultivation when it has been altered by a natural disaster, for example when its surface area has been reduced or covered by stones and sand.”⁷¹
- 28 Kōmuchi summed up the two prerequisites for downgrading the classification of a piece of land as follows: “The damage must be caused by a natural disaster and the configuration of the land must have been altered.”⁷² However, according to Megata, these criteria were not met in the present case.⁷³ Since the law on property tax only provided exemptions in the case of damage brought about by natural causes, which was not the case with the pollution under discussion, several members aligned themselves with Megata's position.
- 29 During the next session on 28 April, Oda proposed to expand the scope of the law: since tax exemptions were granted where stones had been deposited in rice fields, why not do the same when pollution from mining had prevented the harvest from taking place?⁷⁴ In this passage, Oda's position is ambiguous: is he arguing that pollution from mining should be considered a natural disaster – which would turn the question of the origin of the disaster into a moot point – or is he simply asking for the contaminated land to be reclassified in order to benefit from a tax exemption? Later, he expressly calls for changes to the Land Tax Law,⁷⁵ once more orienting the debate towards this possibility that Megata had brushed aside.⁷⁶ On 3 May, the possibility of an amendment was put back on the agenda, this time by Nagaoka. His argument was very simple: since the Land Tax Law had been promulgated *before* the appearance of pollution of this magnitude, it could not have foreseen its consequences.⁷⁷ Nagaoka even proposed to go further and adopt, given the exceptional circumstances, an “urgent imperial decree” (*kinkyū chokurei* 緊急勅令), through which rapid relief could be provided to contaminated areas while the procedure for amending the property tax law could proceed at its own pace and be put before the Diet in the November session.⁷⁸ Oda agreed with this proposal, but Megata continued to consider the case under discussion to be outside the scope of the law.⁷⁹ Koizuka, for his part, also opposed the idea of an amendment and specified:

As to whether this is an inevitable consequence of human action, according to the explanations of experts, pollution from mining is distinct from spontaneous [phenomena] which trace their origins in valleys or mountains. Pollution from mining operations is man-made. As such, and as the progress of the investigation has confirmed in recent days, it should be possible to prevent it.

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- 30 Megata, returning to the point regarding the source of the pollution, suggested a different way of proceeding: “If the damage caused to nature has a point of origin, then the only solution is to identify this source and file a complaint.”⁸¹ In other words, if it was possible to ascertain that the damage to agricultural lands could be traced to pollution from the mine, the issue was a matter of civil law and the dispute should be settled through legal proceedings.
- 31 It is certainly curious that the responsibility of the mining industry was hardly discussed. In fact, it had already been set aside. On 14 April, the Commission discussed the origin of the damage and pollution: was it the whole site (old, abandoned galleries included) and could the responsibility therefore be ascribed to the previous operators? Or did the issue only begin once Furukawa took over the mine’s operations? Was the Ashio mine the only site potentially responsible, or could there perhaps be other sources, such as the effluents from the textile industry of the Kiryū 桐生 district? Nagaoka's analyses had demonstrated that no other potential source of the pollution contained copper, yet a majority of the Commission members agreed not to impute the damage to the mine alone.
- 32 The minutes reflect an extremely cautious – if not complacent – approach to the responsible party. The name of the mining company remains carefully omitted, in what appears to be an attempt at qualifying, if not contesting, Furukawa's liability in the matter. This tendency to minimise the mine's involvement is noticeable from the start, with Gotō's responses being indicative. When questioned on 4 April, after returning from an inspection of the contaminated areas, he said that attributing the distressing spectacle he witnessed solely to mining would be extremely premature.⁸² When Megata refused to change the Land Tax Law to relieve the owners of contaminated land (and indirectly compensate them), he argued that they should find the responsible parties and file a civil complaint. There was certainly more than a little hypocrisy in him taking this line, since the majority of the Commission had, by that time, already come out in favour of a text which minimised the operator's liability.
- 33 This aspect of the issue warrants further investigation. It is not clear to us why opponents of the mine did not opt for legal action. The most likely explanation is that they were dissuaded by the difficulty of firmly establishing the direct responsibility of the Furukawa mine despite the multiple scientific analyses conducted. Moreover, even if one were to assume that the Civil Code provided a sufficient legal basis for such action, it had only just been introduced at the beginning of 1896 and did not come into force until July 16, 1898.
- 34 Nagaoka reacted strongly against what he saw as the authorities’ abdication of its responsibility to the population: “To merely state that there is no legislation, relegate the problem to civil law, leave them to fend for themselves and thus dispose of the problem would require a complete lack of regard.” he said, continuing: “Would this not amount to deserting an entire part of the population?”⁸³
- 35 While this view was shared by Kōmuchi, Oda's proposal to grant tax exemptions for contaminated land failed to win a majority and was finally rejected on 3 May. However,

this point was re-examined at the session held on 7 May, when a “special draft resolution” (*tokubetsu shobun hōan* 特別処分法案) was adopted by a majority of five out of the eight members present, identifying three different types of land affected by pollution:

1. Land impacted by dike collapse due to flooding;
2. Land that had been flooded;
3. Land impacted by irrigation water.

36 The first and second among these were classified as “uncultivable land” and exempted of taxes under Article 20 of the Land Tax Law. For the third type, a solution would have to be found through a civil procedure. The minutes specify, however, that opinions differed on this last point: some Commission members believed that a similar solution should be found, but through the tax legislation.⁸⁴

37 The majority of the Commission thus preferred adopting a special resolution over making more substantial changes to bridge the evident gaps in the existing legislation. In the power struggle between those defending the mine and those advocating strict measures against it, one could thus say that the latter emerged semi-victorious. Compared to the debate on the possible closure of the mine, the issue of compensation does not seem to have divided members as strongly. In the end, Oda’s proposal made it possible to reclassify some of the contaminated land as “uncultivable land”. However, this solution was a compromise that could not be regarded as a real step forward for pollution victims. Since tax exemptions do not amount to financial compensation, this proposal would in fact go on to have dramatic consequences. After 18 May, the last day of the Commission’s deliberations, the government announced that it would not participate in any negotiations between the mining industry and the population.

The order of 27 May 1897

38 As the Commission’s work came to an end, the government began to take action: on 27 May 1897, the Ministry of Agriculture and Commerce sent an “administrative directive” (*kunrei* 訓令) to the Forestry Office, a second directive to the Tochigi and Gunma prefectures and an order to the mine operator, the third after those sent in December 1896 and on 13 May 1897. With no less than 38 points, this last document specified the works to be undertaken in detail. These included creating sedimentation and filtration ponds for wastewater, installing emission control equipment for the refinery (sulphide) and designating secure storage spaces for ore debris and waste rock to prevent landslides and contamination of the water network. The deadline imposed on Furukawa was strict: works would have to begin within seven days and be completed within a range of 30 to 150 days, or else the mine would be closed down. This order is generally considered quite drastic, especially in light of the tight deadlines enforced and the imminent threat of closure.⁸⁵ It remains, however, perplexing to us, especially in light of the discussions outlined above. Could the government have intended to exercise greater stringency than recommended by the members of the Commission? A closer comparative reading by Konishi of the initial draft of the order and the final text signed by the Cabinet allows us to cast a reasonable doubt on this possibility. Through multiple versions, the complex works envisaged at the outset were watered down into much simpler interventions. The text itself was made sufficiently vague so as not to constitute a real constraint on Furukawa, incidentally giving him ample room for

manoeuvre. Point 32, which concerned the deadlines, was indeed quite tough, especially with the added threat of immediate suspension, but the overall impression of firmness given off by the text was ultimately misleading. Furukawa spent considerable sums – almost half of the total value of the mine’s annual copper production – on these works, which incidentally led to substantial technological innovations.⁸⁶ However, the authorities did not monitor the implementation or effectiveness of these measures, nor did they even track compliance with deadlines.⁸⁷ The scale of the programme and the size of the investments were impressive, but more or less ineffective in helping fight the pollution problem, which remained unresolved.

- 39 On 27 May, the Ministry of Finance also sent directives regarding tax exemptions for some of the contaminated land to “tax officials” (*zeimu kanri* 税務官吏). However, since the damage surveys took a considerable amount of time, the provision turned out to be extremely complex to apply in practice. Owners and officials disagreed on the reclassification of their plots, communication was fraught between the prefectural and the central authorities, as well as between the Ministry of Agriculture and Commerce and the Ministry of Finance. The first exemptions were only granted on 2 May 1898⁸⁸ and brought up an additional problem: in a tax-based electoral system, these exemptions deprived beneficiaries of their voting rights, and therefore of the opportunity to elect their representatives, who alone could plead their case. Local taxes were also tied with national tax. As such, these exemptions also dried up regional tax revenues (for towns, villages, hamlets) and reduced the resources available for communities to support their citizens in need. Moreover, the absence of financial compensation (despite the solution being suggested in the December 1896 report, which remained under debate)⁸⁹ left the population destitute.
- 40 The government’s measures only briefly quelled the protesters’ anger before unrest flared up again. On 26 September 1898, a new march was organised. A fourth protest followed on 13 February 1900, giving rise to violent clashes with the police in the locality of Kawamata 川俣 and resulting in a hundred arrests and several legal proceedings. The consequences of the decisions taken by the government in 1897 went on to fuel the conflict for many years.

Conclusion

- 41 Studying the 1896–1897 period in detail provides us with a better understanding of the position of central authorities through the Ashio affair. They were non-interventionist during the first decade of the conflict but were put under pressure by growing resistance and ended up becoming gradually more and more involved. The establishment of an Inter-ministerial Commission of Inquiry and especially its decision to take regulatory measures are tangible signs of this latter development. A day-by-day study of the debates between the members of the Commission reveals the different forces at play and the interaction between the different political currents of the time. Above all, this analysis serves to highlight the much broader issues surrounding the crisis: the clash of interests between agriculture and industry, a sector which was developing rapidly without adequate safeguards; the emergence of a centralised state and a modern legal system only beginning to take its first steps in dealing with questions of civil liability; and the role of scientific expertise in political decision-making. Indeed, the arguments put forth by Gotō, who was convinced that mining

pollution was not a danger to health, are especially instructive in light of the central role he played in public health policy and the establishment of industrial hygiene.⁹⁰ To safeguard the interests of an extractive sector seen as vital for the development of the country, the plight of the people affected by the contaminated lands was relegated to second place. Gotō thus actively played the role of the technocrat in the management of this issue in which State power and scientific expertise came together in complex ways.

- 42 As we have seen, state intervention in the Ashio case did not have the same implications for all actors. In the end, the implementation of the required works did not come with any significant disadvantages for Furukawa. While the investments needed were admittedly huge, Furukawa managed to secure his mine and was relieved from having to pay any damages to the victims. The State was tasked with this latter responsibility, compensating for part of the damage to arable land through tax exemptions. The order of 27 May 1897 thus sealed a kind of tacit agreement between Furukawa and members of the authorities who were committed to industrialisation – they regulated it to some extent, but certainly did not question its necessity, despite the human and environmental cost. On the other hand, the measures announced by the central authorities had very serious consequences for the inhabitants of the contaminated areas: pollution persisted, tax exemptions deprived beneficiaries of voting rights and impoverished the very communities that could have supported them. These impacts partly explain why the struggle continued after 1897. Growing state intervention resulted rather in greater repression of the protest movement than in further regulation of the industry, especially after the Kawamata incident. In addition, the authorities began resorting to radical measures. In a bid to counter public anger, the government set up a new Commission of Inquiry in 1902. The following year, the Commission proposed a comprehensive land use plan that included the canalisation of the Watarase and Tone rivers and the demolition of the village of Yanaka to make room for a sedimentation pond.⁹¹ Tensions intensified, but the government did not hesitate to use coercive measures such as forced evictions. Instead of further taking action against the mine, it treated the water network as the primary source of the damage and proceeded with its canalisation. By doing so, they moved to a higher level of action, even going so far as to actually reshape the landscape.
- 43 Ultimately, the government ended up playing a prominent role in the Ashio affair, unlike in similar cases of the same period where negotiations took place directly between the protesters and the operators, sometimes leading to agreements more favourable for the former. The conflict that began in the 1890s around the mining activities of the Sumitomo company in Shikoku is often held up as an example:⁹² a refinery, first set up near Niihama, then moved to Shisakajima (Ehime Prefecture) in the Inland Sea of Japan was opposed by the inhabitants of the area. In this case, the company agreed to adjust its production process and pay compensation to the victims as early as 1910. Whether or not they were widely reported, other environmental conflicts did take place in the archipelago throughout the modern period before the debate was to once again come to the fore in the 1950s and 1960s.⁹³ Sporadic protests continued to erupt in Ashio, including in the 1910s, 1920s and during the Asia-Pacific War, as opposition to pollution became more widespread across the country. In 1942, for instance, Japan's internal and external situation did not prevent Taiji fishermen from filing a complaint against an Ajinomoto factory belonging to the Suzuki company

in Kawasaki.⁹⁴ We can thus see that environmental issues were deeply interlinked with the industrial development of the archipelago and that their regulation – successful or otherwise – helped define the contours of the modern state. Carol Gluck, in her reflection on “modernity” and the various forms it took across the world, used the Ashio affair to illustrate the “cumulative changes in context” which caused a certain type of political and technological modernity to emerge from the Japanese experience.⁹⁵ By studying this episode of Meiji history and its various implications, we hope to have provided additional elements for the analysis of the role of the Japanese state with respect to the industrial, ecological and social issues of the last decades of the nineteenth century, with the dual purpose of integrating this case into the global history of industrial pollution during the modern era⁹⁶ and of comparing the response of the Japanese government to that of other industrialised powers of the time.

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NOTES

1. The “Ashio copper mine pollution affair” (*Ashio dōzan kōdoku jiken* 足尾銅山鉍毒事件), or “Ashio mine pollution affair” (*Ashio kōdoku jiken* 足尾鉍毒事件), which we have chosen to shorten to “Ashio affair”, has been extensively studied since the 1970s. As far as Japanese works are concerned, we shall draw mainly on Kano, 1974; SHŌJI & SUGAI, 2014 [1984]. Some articles in English, while dated, still provide a useful summary, in particular Notehelper, 1975. Lastly, we have at our disposal rich compilations of sources, including UCHIMIZU, 1971 and Tochigi-kenshi hensan iinkai, 1980.

2. About the mine, see among others MURAKAMI, 2006. Concerning the aspects of the Ashio affair pertaining to labour disputes, see NIMURA, 1988. His work has been partially translated into English: NIMURA, 1997.
3. The mobilisation, which started as a local protest, eventually reached the capital and came to involve people from a wide variety of socio-cultural backgrounds.
4. This observation led Konishi Tokuō to produce three seminal articles on this period between 1989 and 1990: KONISHI, 1989, 1990a & 1990b.
5. There has been little innovation in the research on this subject since Konishi's work, although other editions of the source material were published from 2000 onwards: Kōdokushi hensan iinkai, 2006–2013; ANZAI *et al.*, 2009.
6. The latest example to date is MIURA, 2017. While his book is carefully documented, and while the author briefly evokes the differences between members of the Commission, he focuses mainly on the decree issued following the deliberations of the Commission – mainly in order to stress its severity.
7. This point of view, to which we subscribe, is upheld by researchers like Shōji and Sugai. However, Konishi's articles demonstrate it most convincingly.
8. The minutes have been published in “Ashio dōzan kōdoku jiken chōsa iinkai sokkiroku (shō)” 足尾銅山鉞毒事件調査委員会速記録(抄) [Minutes of the *Commission of Inquiry on the Ashio Mining Pollution* (Extracts)], hereafter “Ashio chōsa sokkiroku”, in Tochigi-kenshi hensan iinkai, 1980, 641–813. Although slightly abbreviated in places, this version has the advantage of providing a transcript. The complete handwritten minutes are freely available on the website of the National Archives of Japan: <https://www.digital.archives.go.jp/>.
9. ANDŌ, 1992.
10. See for instance SHIMIZU, 1995. The literature available in English on other incidents of pollution is scarce. For an introduction, see MORRIS-SUZUKI, 1998.
11. A graduate of the Imperial University (Tokyo), Sakano had obtained a degree in Agricultural Chemistry from the Faculty of Agronomy in 1890. In 1891 and 1892, the Ministry of Agriculture and Commerce tasked him with improving the technology of the sugar industry in Kagoshima Prefecture. Later, he was deputed to the experimental agricultural laboratory of the same ministry to carry out analyses in connection with the Ashio affair. For Commission members, see Table 1.
12. MURAKAMI, 2006, p. 201; SHŌJI & SUGAI, 2014 [1984], p. 56.
13. Furukawa had some success in trading raw silk for the Ono Group (*Onogumi* 小野組). In 1871, after his daughter married the second son of Mutsu Munemitsu 陸奥宗光 (1844–1897), Furukawa made him his legal heir. During the course of his career, Mutsu held the positions of governor of Hyōgo and Kanagawa and became the Minister of Agriculture and Commerce in 1890. Furukawa, backed by the support of many, quickly made a fortune in the mining sector. He bought several deposits which he skilfully developed and exploited, for instance at Innai 院内 and Ani 阿仁. By the turn of the century, he was ruling a veritable empire, mainly in the east and north-east of the country. By 1897 he was the owner of twelve copper mines (accounting for about 40% of domestic production), eight silver mines, one gold mine, and many more enterprises. In the following decades, the group became a true conglomerate (*zaibatsu* 財閥), operating in heavy industry, chemicals and machinery, among others.

14. In the “amicable settlements” (*jidān keiyaku* 示談契約) that he concluded with some of the residents as early as 1892, Furukawa presented these facilities as a means of fighting pollution. In exchange for the payment of a small sum and Furukawa’s promise to reduce damage through the use of dust extractors, the signatories agreed not to raise new complaints for a four-year trial period. In reality, the term “dust extractors” (*funtō saishūki* 粉銚採集器) included various sorting and disposal facilities for sludge, tailings and sand whose main goal was ensuring more effective production. According to historian Nimura Kazuo, documents from 1897 clearly show that these devices barely improved the recovery rates. This measure had little connection with the reduction of toxic discharge. NIMURA, 1988, p. 214–215.
15. “Ashio dōzan kōdoku tokubetsu chōsa iin-kai tōshin-sho” 足尾銅山銚毒特別調査委員会答申書 (Report of the of the Special Commission of Inquiry on the Ashio Mining Pollution), in *Tochigi-kenshi hensan iinkai*, 1980, p. 629.
16. SIPPEL, 2006, 16.
17. *Ibid.*, 10.
18. TAKAGI, 1974, 10.
19. *Itsuka-kai*, 1926, 99.
20. These figures are drawn from *Sōgyō hyakunenshi hensan iinkai*, 1976, 82.
21. SHŌJI & SUGAI, 2014 [1984], 1315.
22. We should keep in mind that the Ashio affair took place between two military conflicts which were crucial to Japan’s trajectory: the first Sino-Japanese War of 1894–1895 and the Russo-Japanese War of 1904–1905.
23. This estimation is based on figures provided by TAKAGI, 1974, 7.
24. Between 1886 and 1895. Coal accounted for 6% of export during the same period. SIPPEL, 2006, 10–12.
25. *Itsuka-kai*, 1926, 232.
26. A local dignitary, he was elected to the very first Diet (1890) and then again six successive times till the year 1901. He spent most of his parliamentary efforts around the fate of the population affected by pollution. Studies about the Ashio affair, of which he was a major figure, generally give him pride of place. See KOMATSU, 2001. In French, he is mentioned by SOUYRI, 2016, 343–363.
27. This speech is titled “Kōeki ni yūgai no kōgyō o teishi sezarū gi ni tsuki shitsumon-sho” 公益ニ有害ノ銚業ヲ停止セザル儀ニ付質問書 (Question on the need to stop mining activities prejudicial to public good), in Tanaka, 1989, 53–58.
28. The text is quoted in SHŌJI & SUGAI 2014 [1984], 50.
29. ENOMOTO & KABAYAMA, 1971 [1938].
30. *Ibid.*, 178.
31. Otherwise known as the “First Commission of Inquiry on Mining Pollution” (*Daiichiji kōdoku chōsa iinkai* 第一次銚毒調査会委員). However, we have mentioned above the existence of a previous Special Commission, which lasted only three days (it was established on December 22 1896 and submitted its report on the 25th). While the Special Commission of 1896 was internal to the Ministry of Agriculture and Commerce, the 1897 Commission was inter-ministerial.
32. The phrase was coined by NOTEHELPER, 1975, 372.

33. The *Kunaishō* 宮内省, established in 1869 to administer the affairs of the imperial household and the aristocracy.
34. A medical doctor by training, head of the Hygiene Office since 1892, he then became the head of the Civil Administration Office of the Governorate-General of Taiwan (1898) and later held several ministerial posts.
35. The *Hōseiikyoku* 法制局, which reported directly to the Prime Minister, wrote reports on government deliberations, projects and investigations concerning officials and administrative bodies. It had an advisory role in the drafting of laws and decrees, as well as in their implementation, application, repeal and revision. Under the 1889 Constitution, the office director was part of the Cabinet staff along with the chief secretary and played a prominent role as the senior official in legal matters.
36. Irisawa specialised in internal medicine and was also a historian of the discipline. After graduating from the Imperial University (Tokyo) in 1889, he studied in Strasbourg and Berlin from 1890 to 1894. Upon his return to Japan, he opened his own clinic. In 1895, he first became assistant professor at the Faculty of Medicine of his alma mater, then a full professor in 1901. He was the appointed physician of the Ministry of the Imperial Household several times before becoming its chief physician in 1924.
37. The total differs according to the sources. Nineteen is the maximum number given, which includes Shiga Shigetaka 志賀重昂 (1863–1927), Shiga Taizan 志賀泰山 (1854–1934) and Shirasawa Yasumi 白沢保子 (1868–1947). All three were appointed on October 13, 1897. See KONISHI, 1989.
38. “Ashio chōsa sokkiroku”, 1980, 656.
39. *Ibid.*, 692.
40. Quoted by SHŌJI & SUGAI, 2014 [1984], 50.
41. “Ashio chōsa sokkiroku”, 1980, 693.
42. *Ibid.*, 694
43. *Ibid.*, 694–695.
44. *Ibid.*, 695.
45. *Ibid.*, 696.
46. *Ibid.*, 705.
47. *Ibid.*, 711.
48. *Ibid.*, 713.
49. *Ibid.*, 717.
50. *Ibid.*, 758.
51. Several substances (arsenic, chlorine, copper sulphate, sulphur) and heavy metals (cadmium, lead, mercury, zinc) are used to process the ore.
52. Komatsu gives an account of all these observations; we have mentioned the most salient. KOMATSU, 2001, 346.
53. “Ashio chōsa sokkiroku”, 1980, 779.
54. *Ibid.*, 784.
55. *Ibid.*, 778.
56. Sōgyō hyakunenshi hensan iinkai, 1976, 167.

57. These contradictions are highlighted by Konishi, who demonstrates how the medical issue is used to prevent the closure of the mine. KONISHI, 1989, 773–776.
58. *Yomiuri shinbun*, April 14, 1897.
59. Even before his appointment, Irisawa had been approached around the end of April and dispatched to the contaminated lands, where he carried out analyses from May 3 to 5. *Ibid.*, 777.
60. *Ibid.*
61. *Kōdoku chōsa iinkai* 鉱毒調査委員会 (“Committee of Inquiry on Mining Pollution”, hereafter “Select Committee”). See Table 2.
62. KONISHI, 1989, 785–786. The fact that the three members belonging to both groups were all in favour of the mine says a great deal about the actual role played by the Select Committee. Konishi elaborates on this point in KONISHI, 1990b.
63. Koizuka made it known on 28 April. “Ashio chōsa sokkiroku”, 1980, 729.
64. *Ibid.*, 810.
65. *Ibid.*, 810.
66. This issue occupied a good part of the fourth to seventh sessions on 26, 28 April and 3, 7 May. The subject has been tackled somewhat rarely in the secondary literature, except by Komatsu, who provides some information on the matter. KOMATSU, 2001, 344–345.
67. From the 25 April edition: “*kōdoku chōsa iin no kekka ni shite mangaichi uwasa no gotoku hiteishi to keshitaran ni wa higaimin ichidō shukkyō shite kesshi no daiundō o kokoroshimuru koto*” 「鉱毒調査委員の結果にして万一噂の如く非停止と決し たらんには被害民一同出京して決死の大運動を試むる事」, quoted by *ibid.*, 344.
68. The 1884 “Land Tax Law” (*chiso jōrei* 地租条例) had replaced the 1873 law (*chiso kaisei* 地租改正), sometimes also known as *chiso kaisei jōrei* 地租改正条例.
69. In other contexts, the word *arechi* can also mean “fallow land”.
70. “*Arechi wa sono higai no toshi yori jūnen inai menso nenki o sadame nenkigatsu ni itari genchika o fukusu*” 「荒地ハ其被害ノ年ヨリ十年以内免租年期ヲ定メ年期月ニ至リ原地価ニ復ス」, quoted by AKAISHI, 2009, 11.
71. “Ashio chōsa sokkiroku”, 1980, 718.
72. *Ibid.*, 733.
73. *Ibid.*, 720.
74. *Ibid.*, 732.
75. *Ibid.*, 732–733.
76. *Ibid.*, 723.
77. *Ibid.*, 737.
78. *Ibid.*, p. 737–738. The similarities between Nagaoka’s point of view and the position defended by Tanaka in the Diet are quite astonishing: according to Komatsu, Tanaka took inspiration from Nagaoka. KOMATSU, 2001, 345.
79. “Ashio chōsa sokkiroku”, 1980, 740.
80. *Ibid.*, 748.
81. *Ibid.*, 720.

82. Mainichi newspaper (*Mainichi shinbun* 毎日新聞) of 7 April 1897, quoted by KONISHI, 1989, 770.
83. “Ashio chōsa sokkiroku”, 1980, 750.
84. *Ibid.*, 635–636.
85. Konishi lists the different interpretations of this point proposed in the 1970s and 1980s. KONISHI, 1989, 747–754.
86. On these issues, see MURAKAMI, 2006, 210–216.
87. On the implementation of preventive works and on deadlines, see KONISHI, 1990a.
88. SHŌJI & SUGAI 2014 [1984], 76–81.
89. Members of the Diet called on the government to arbitrate negotiations for compensation between Furukawa and the population, but to no avail. *Ibid.*, 77–78.
90. On this issue, see THOMANN, 2015.
91. This phase has been more thoroughly studied than the 1896–1897 period. In particular, see MIURA, 2017, 184–226.
92. MORRIS-SUZUKI, 1998, 764–768; WATANABE, 2013.
93. Four major diseases gave rise to legal actions during this period: the so-called Minamata disease (mercury poisoning), which broke out in the city of the same name as well as in Niigata Prefecture (Minamata disease in Niigata), a disease called *itai itai* (“ouch ouch”, cadmium infection), and asthma linked to air pollution in the city of Yokkaichi.
94. MORRIS-SUZUKI, 1998, 768–771.
95. Whether at the micro level (the specific situation of the Tochigi countryside, the modification of the local administrative and tax collection system) or macro (the industrialisation of the country, the strategic role of copper production, the adoption of a constitution). GLUCK, 2011.
96. On the French case, see (among others) LE ROUX, 2011.
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ABSTRACTS

The Ashio copper mine case was one of the most important ecological and social crisis of modern Japan. Due to the scale of the environmental issues and of the protest movement, in 1896, the central authorities were forced to get involved, after a decade of *laissez-faire*. On March 24, 1897, an Ashio pollution investigation Commission was established by the Ministry of Agriculture and Commerce, in charge of this matter. If the measures taken by the Government represented a step towards the supervision of mining activities, the initial purpose was to protect this industry. The analysis of the minutes of the Commission and of the governmental decisions tells us a great deal about how the authorities back then handled an environmental crisis, as well as what was at stake in the exploitation of a natural resource.

L'affaire d'Ashio constitua l'une des crises écologiques et sociales majeures du Japon moderne. À partir de 1896, les problèmes environnementaux et la contestation avaient pris une ampleur telle que les autorités centrales furent obligées de s'impliquer, après une décennie de laissez-faire. Le 24 mars 1897 une Commission d'enquête sur la pollution minière d'Ashio fut instituée par le ministère de l'Agriculture et du Commerce, en charge du dossier. Si les mesures prises par le gouvernement représentèrent une étape dans l'encadrement des activités minières, elles avaient surtout pour but la protection de cette industrie. L'analyse des procès-verbaux de cette Commission ainsi que des décisions gouvernementales nous renseigne sur la façon dont les autorités de l'époque entendent gérer une crise environnementale, de même que sur les enjeux de l'exploitation d'une ressource naturelle.

INDEX

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