

# Coal and Colonialism: Production Relations in an Indian Coalfield, c. 1895–1947\*

DILIP SIMEON

## Introduction

The year 1995 marked the centenary of the exploitation of a 400 square-kilometre tract in the Indian province of Bihar known as the Jharia coalfield. From 1895, when rail lines entered the region, until the end of the World War I, coal output in India increased tenfold and the size of the mines' workforce fivefold. By 1907 Jharia was yielding half of India's output. One of its oldest mines was Khas Jharia, which worked a 260-foot deep source. Thirty-four years after it opened, its surface had merged with the outskirts of Jharia township and restrictions were imposed on the dimensions of its galleries. Despite these, Khas Jharia's pillars collapsed on 8 November 1930 causing an 18-foot deep subsidence and widespread destruction.<sup>1</sup> This incident was the proximate cause of an underground fire which rages to this day.

Emissions and subsidences at Khas Jharia continued, despite efforts by the Mines Department and the railways to douse the seams. In 1933 the flaming crevasses alarmed local residents, many of whom deserted their houses.<sup>2</sup> The Bihar earthquake of 1934 enhanced air circulation in the mine,<sup>3</sup> and by 1938 an observer's first impressions of Jharia town were of fissures belching colourful flames.<sup>4</sup> The disaster was the most

\* This paper contains certain material from a paper presented to the Davis Center seminar at Princeton University in January 1995, and from my book, *The Politics of Labour Under Late Colonialism: Workers, Trade Unions and the State in Chota Nagpur, 1928–1939* (Delhi, 1995). In the following essay, the *Report of the Labour Enquiry Commission* (1896), will be referred to as *RLEC*; the *Treharne-Rees Report* (1919), as *Rees*; the *Report of the Coalfields Committee* (1920), as *Foley*; the *Report of the Coal Mining Committee* (1937, L.B. Burrows), as *CMC*; the *Report of the Indian Coalfield's Committee* (1946, Mahindra), as *ICC*; the *Report on an Enquiry into Conditions of Labour in the Coal Mining Industry in India* (1946, S.R. Deshpande), as *Deshpande*; the *Transactions of the Mining and Geological Institute of India*, as *TMGI*; the Tata Steel Archives as *TSA*, and the *Annual Report of the Chief Inspector of Mines in India* as *ARCIM*. All file references are from the Bihar State Archives, except those suffixed NAI, which are from the National Archives of India. *CEHI* denotes *The Cambridge Economic History of India* (1983); *GOI*, the Government of India; *RCL*, the Royal Commission on Labour (1931); *COI*, the Census of India and *BLEC*, the *Report of the Bihar Labour Enquiry Committee* (1940).

<sup>1</sup> *ARCIM* (1930), p. 34.

<sup>2</sup> *Searchlight*, 13 January 1933: "Fire in Jharia Collieries – An Alarming Situation – Danger to Jharia Town", *Report*, 9 January 1933.

<sup>3</sup> *TSA*. See the article "Fire at Jharia", *TISCO Review* (March 1934), p. 145.

<sup>4</sup> Mukutdhari Singh, *Bhuli Bisri Kariyan* (Patna, 1978), vol. 2, p. 17.

notorious example of a general malaise: by 1936, 42 of the 133 collieries in the area were on fire.<sup>5</sup>

These phenomena were the more dramatic ramifications of production relations in the coal industry. Like its other features, they may best be comprehended through a contextual analysis of institutional forms. Such an analysis would have a bearing on matters such as mines safety, the organization of natural resources, and the emergence of an *Adivasi* (tribal) political estate. It would also add substance to the ongoing debates about the colonial economy, which have tended to revolve around concepts such as “deindustrialization” and “economic progress”. I believe that such economies become more accessible to historical research when considered as alloys of novel and customary relationships – an approach which entails a study of specific enterprises, their strategic functions and the social and technical aspects of production. This paper will focus upon the forms of wage labour and patterns of employment peculiar to Jharia. It will examine how these relate to the social reproduction of the workforce, and suggest the place of this enterprise in colonial history. The remarks concerning forms of capital and landed property are intended to support the argument about the fusion of the social-institutional and the material-technical aspects of production.

### The historical specificity of production relations

Writing about the sale and purchase of labour power, Marx suggested that the scale of the workers’ “so-called necessary requirements”, and the manner of their satisfaction depended upon the “level of civilization” of a country, and the “habits and expectations” of its class of free labourers. He continued: “In contrast [ . . . ] with the case of other commodities, the determination of the value of labour power contains a historical and moral element”.<sup>6</sup> This “element” presumably included conditions which engendered specific types of enterprise and production relations, and must, therefore, have affected the entire circulation process of capital. These remarks, combined with the view that the constant factor of colonial economies was “the search for and control of cheap labor [ . . . ]”, and that, “‘feudalism’ in labor relations may be considered a function of the development of the colonial economy in its entirety [ . . . ]”,<sup>7</sup> provide a provocative approach to our study of Indian coal mining.

An examination of the ways in which pre-capitalist social forms affected the character of colonial capitalism has other theoretical implications.

<sup>5</sup> *Searchlight*, 24 January 1936.

<sup>6</sup> Karl Marx, *Capital* (London, 1976), vol. 1, p. 275.

<sup>7</sup> Rodolfo Stavenhagen, “Seven Fallacies About Latin America”, in J. Petras and M. Zeitlin (ed.), *Latin America: Reform or Revolution?* (New York, 1968), p. 17.

For example, the logical outline of *Das Kapital* leaves out the notion of state-structure from the account of the self-augmentation of value and the money form of capital – thus passing over the matter of the formalization of the money commodity. However, the reproduction process of capital requires the existence of formal boundaries describing “communities of money”, so to speak, which constitute the limits of its valid circulation, and which thereby pull into the argument the history of the state and the materials of culture and tradition – the “historical and moral element”, once again.

The analytical value of the concept of “the relations of production” is enhanced when these are situated in the history of given societies. Money, fixed and variable capital, production price, profit and rent, are abstractions which in Marx’s scheme are infused with a meaning derived from the labour theory of value. Their social representatives appear in our context as managing agents, *zamindars* (landlords), company lessees and piece-rated low-caste and tribal miners. The agencies functioned as primordial banks, the *zamindars* as rentiers. The outlay on variable capital included commissions paid to certain villagers in the hinterland who used kinship networks to recruit labour. The Railway Board’s control of the selling price of coal derived from its position as the principal consumer and transporter and its ownership of captive collieries. The system’s informal mode of regulation<sup>8</sup> developed out of a pre-industrial social context which affected recruitment, remuneration and managerial strategies. (It needs to be considered that the type of workforce available in a given situation engenders a certain form of capital and conduces to specific forms of employment.) The colonial economic regime was represented by a legal structure which accommodated to this mode of regulation by way of inertia and laxity of enforcement. The ethnographic stereotypes current among the managers and technocrats were part of the mode of regulation and helped perpetuate it.

### The era of steam

By the second quarter of the nineteenth century, the Indian economy was being transformed into an exporter of indigo, tea and opium and

<sup>8</sup> This term enables us to develop a fresh approach towards the issue of the “colonial mode of production”. In Lipietz’s use of the twin concept of the “regime of accumulation and the mode of regulation”, the “regime” is defined as “the stabilization [ . . . ] of the allocation of the net product between consumption and accumulation”, a process which “implies some correspondence between the transformation of both the conditions of production and the conditions of the reproduction of wage-earners [ . . . ] (and) some form of linkage between capitalism and other modes of production”. He defines the “mode of regulation” as the “materialization” of such regimes, “taking the form of norms, habits, laws, regulating networks [ . . . ] that ensure the unity of the process, i.e. the approximate consistency of individual behaviours with the schema of reproduction”. The

an importer of textiles. The steam engine appeared in mints, baling presses, tugs and riverine trade. By the late 1830s steam vessels were operating on the Ganga, and a decade later plying coastal routes. Steam-driven gunboats also played crucial roles as imperial weapons in Burma and China.<sup>9</sup> As coal rapidly acquired significance for purposes of commerce and conquest, the exploitation of the "Bengal coalfield" at Raniganj began in 1814. Rail construction began to be promoted by businessmen interested in selling textiles and importing cotton, and by shipping companies which needed coal supplies at Indian ports.<sup>10</sup>

From 1855 onwards the extension of rail lines to the coalfields led to a surge in output. In the aftermath of the 1857 revolt, railway investment accelerated, with the Government of India (GOI) underwriting profits. Partly for famine management, but mainly for military reasons, it authorized the laying of tracks to strategic points.<sup>11</sup> One such was the Jharia field, adjacent to Raniganj, which had been surveyed in 1866 and 1887, but seriously developed only after the East Indian Railway's (EIR's) technical survey of 1890. Extraction there was heralded by track extensions in 1894–1895. In six years, Jharia's output rose from 1,500 to 2 million tons, after which it became the most productive field in the country.<sup>12</sup>

The forms of capital which developed Jharia were an outgrowth of the agency houses, which had invested the fortunes of English gentlemen

"mode" is seen as a "body of interiorized rules and social processes": see Alain Lipietz, "New Tendencies in the International Division of Labour: Regimes of Accumulation and Modes of Regulation", in A.J. Scott and M. Storper (eds), *Production, Work, Territory: The Geographical Anatomy of Industrial Capitalism* (Boston, 1986).

<sup>9</sup> See D.R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (New York, 1981), ch. 1. Also see R.S. Rungta, *The Rise of Business Corporations in India 1851–1900* (Cambridge, 1970), ch. 1; and M.D. Morris in *CEHI*, pp. 563–564. In 1840, there were five private and nine government-owned steam boats on the Ganga: Blair Kling, *Partner in Empire: Dwarkanath Tagore and the Age of Enterprise in Eastern India* (Berkeley, 1976), p. 99.

<sup>10</sup> In "The Pattern of Railway Development in India", Daniel Thorner stressed that the great railway networks were built in order to intermesh the economies of Britain and India: *The Far Eastern Quarterly*, 14(2) (1955), pp. 201, 203. In *Investment in Empire: British Railway and Steam Shipping Enterprise in India 1825–1849* (Philadelphia, 1950), p. 23, Thorner noted: "the East Indian Railway [...] began as little more than an extension of the Peninsular & Oriental Steam Navigation Company [...] The struggle for governmental aid to steam shipping was, in many respects, simply a dress rehearsal of the later and greater campaign for the introduction of railways into India."

<sup>11</sup> Thorner, "Railway Development", pp. 204–209; and J.M. Hurd, in *CEHI*, p. 742. "Defence needs and fear of Russia thus eventually triumphed over economy and financial considerations", wrote W.J. Macpherson, in "Investment in Indian Railways", *Economic History Review*, 8(2) (1955), p. 186. "The Government wanted railways for social, economic and perhaps mainly military reasons."

<sup>12</sup> *CMC*, pp. 9–10. Bihar was part of the province of Bengal until 1912.

early in the nineteenth century.<sup>13</sup> After their collapse in the 1830s, the so-called managing agencies began controlling joint stock associations by proxy, a practice initiated by the trader and landowner Dwarkanath Tagore, who in 1836 entered into a partnership over a steam tug association after purchasing India's then largest coal mine. The coal was consumed mainly by the steam boats of the public company.<sup>14</sup> In mid-century, as the locus of financial decision-making shifted to London, Indian trade came under the interlocking control of the agencies and English cartels such as the Peninsular & Orient's Calcutta Conference and the Indian Jute Mills Association. From 1890 to 1920 the number of coal companies in Bengal and Bihar increased from 6 to 227.<sup>15</sup> In 1911, seven managing agents controlled 55 per cent of the jute, 61 per cent of the tea and 46 per cent of the coal companies.<sup>16</sup> Annual all-India coal production increased from 4.7 million tons during 1896–1900, to 11.5 m. tons in 1906–1910, 19.3 m. tons in 1916–1920, and 23.8 m. tons in 1930.<sup>17</sup>

On behalf of the managed firm, the agents would take charge of buildings, machinery purchases, staff, operations, and marketing, as well as the leading part in finance. Remuneration took the form of a commission on production or profits. The "poundage" system, with commissions based on the weight of the product, was popular in the nineteenth century, and was supplemented in the twentieth by a percentage of the profits, generally ranging from 7.5 to 12.5 per cent. Commissions were over and above dividends paid to the agents and others – the agent could make a "poundage" even when the firm was making a loss. Some promoters would divide their commissions with other furnishers of capital. Managing agents could manage over a hundred companies at the same time – in jute, tea, coal, ships, flour mills, and so on. Their special function came to consist in supervision. Directed by their financial branches and focusing on immediate rather than future gain, they trans-

<sup>13</sup> See Rungta, *Business Corporations*, ch. 1; S.K. Basu, *The Managing Agency System in Prospect and Retrospect* (Calcutta, 1958), ch. 1; and Rajat Ray (ed.), *Entrepreneurship and Industry in India* (Delhi, 1994) pp. 19–24, 30.

<sup>14</sup> B. Kling, "The Origins of the Managing Agency System", in Ray, *Entrepreneurship*. See also Kling, *Partner in Empire*, chs 5 and 6. Tagore's first mine was abandoned to an underground fire caused by de-pillaring and spontaneous combustion: p. 96.

<sup>15</sup> Henner Papendieck, "British Managing Agencies in the Indian Coalfield", in D. Rothermund and D.C. Wadhwa, *Zamindars, Mines, and Peasants* (New Delhi, 1978), p. 184. From 1890 till 1918, Indian coal production increased tenfold, capital invested in coal twelvefold, and the size of the workforce fivefold (p. 175). Also see A.K. Bagchi, *Private Investment in India* (Delhi, 1972), pp. 163–164, 176–179; and Ray, *Entrepreneurship*, pp. 30–36, 47.

<sup>16</sup> Bagchi, *Private Investment*, p. 176. They were Andrew Yule, Bird, Shaw Wallace, Williamson Magor, Octavius Steel, Begg Dunlop and Duncan Bros.

<sup>17</sup> A.B. Ghosh, *Coal Industry in India* (Delhi, 1978), pp. 278–280.

ferred profits from one company to another and sold cheap fuel to their other concerns.<sup>18</sup> The calculation of the net profits of coal companies before deductions for depreciation and reserves rendered this form of management detrimental to the collieries.<sup>19</sup>

Well before World War I, coal had become the empire's major source of energy. By 1927, metallurgy consumed 24.2 per cent of output and jute and textile mills 8.2 per cent between them. Railways took a third (a proportion that remained broadly stable till 1947), increasing their demand from under a million tons in 1893 to 7.5 m. tons in 1936.<sup>20</sup> By charging relatively low freight rates for long-haul bulk goods to and from the interior and the great port towns, railway companies rendered internal trade more expensive than foreign.<sup>21</sup> Their freight wars and zonal boundaries prevented network integration and the EIR used its monopoly to charge high rates for coal deliveries to Calcutta.<sup>22</sup> Until 1914 this tendency combined with the impact of the Suez Canal and low freight-rates on India-bound shipping (from Britain) to render British and South African coal cheaper in western and southern India.<sup>23</sup> The war enabled Indian coal to capture the home market.

The development of Jharia boosted Indian entrepreneurs' investments in mining. From 1900 to 1947 their share of output grew from one-fifth to one-third in a process marked by tremendous fluctuations. Half the collieries of the inter-war period were Indian companies whose share in

<sup>18</sup> D.H. Buchanan, *The Development of Capitalistic Enterprise in India* (New York, 1934), pp. 166–171; and *CMC*, p. 28. In certain areas in Jharia, more pits were sunk and more machinery installed than necessary. "Sometime this was due to the fact that although the coal was near the surface, the advisors had interest in the sale of mining equipment": Buchanan, *Development of Capitalistic Enterprise*, p. 261.

<sup>19</sup> Papendieck, "British Managing Agencies", pp. 190–192. There were marked and arbitrary differences between coal prices quoted for independent and associated buyers, pp. 204–212.

<sup>20</sup> *RCL*, vol. 4, part 1, p. 242; and B.R. Seth, *Labour in the Indian Coal Industry* (Bombay, 1940), p. 8. The 1946 report estimated railway consumption at 6.3 m. tons in 1920, 7.0 in 1928, and 7.4 in 1935: *ICC*, p. 298.

<sup>21</sup> Hurd, *CEHI*, p. 752. See also *CEHI*, pp. 752–758; and Thorner, "Railway Development", p. 208.

<sup>22</sup> The agents claimed that coal contributed more to tonnage hauled than to profits earned. Given its freight structure, the EIR was making a concession to coal. See *CMC*, pp. 91–92.

<sup>23</sup> Hurd, *CEHI*, pp. 752–758. The EIR's share of track in 1897 was 9 per cent, but it garnered 23 per cent of total railway earnings. The popularity of foreign coal was also due to unreliable grading of Indian coal. In 1925 a Grading Board began standardizing grades exported from Calcutta: *CMC*, pp. 73–77. The "raw" nature of Indian exports generated a surplus of cargo space on return voyages from Britain, which carried less bulky manufactured goods. This was made available for British coal, and helped lower transport costs. See C.N. Vakil and S.K. Muranjan, *Currency and Prices in India* (Bombay, 1927), pp. 234–236.

production was about 5 per cent.<sup>24</sup> They mined low grade coal from labour-intensive shallow mines, were quickly opened and wound up, and competed ferociously. Combining in the Indian Mining Federation (IMF) in 1913, they prospered in the post-war boom, mining over a third of output. In the mid-1920s slump their output share underwent a 10 per cent decline. Internecine strife bred the Indian Colliery Owners' Association (ICOA) in 1934. The two bodies often asked for state-regulated prices, but such a course conflicted with the cost-cutting interest of the Railway Board.<sup>25</sup> By 1928, British-controlled coal companies, which had combined in the Indian Mining Association (IMA) in 1892, accounted for 60 per cent of output.<sup>26</sup> In 1944 this had risen to 70.6 per cent, with the railways' captive collieries accounting for another 11.5 per cent.<sup>27</sup> A system had emerged in which geo-strategic and economic elements had blended together. If the British Indian Army was "the iron fist in the velvet glove of Victorian expansionism"<sup>28</sup> its mobility hinged around the labours of Indian coal miners.

### The demography of employment

Some 125,000 persons were engaged in Jharia during the 1920s and 1930s.<sup>29</sup> Their employment patterns reveal relationships between grades, skills and identity. In a manifestation of an industrial system adapting to the cultural demography of its hinterland, the workforce was mainly "low" caste, female and tribal. Supervisory and clerical jobs were held by upper-caste males. In the 1920s, nearly three-fourths of the workforce was from Manbhum and districts contiguous to it, and almost half (47.5 per cent) from Manbhum alone.<sup>30</sup> Most immigrants came from Hazaribagh, and the two nearest non-contiguous districts of Gaya and

<sup>24</sup> C.P. Simmons, "Indigenous Enterprise in the Indian Coal Mining Industry, c. 1835–1939", *Indian Economic and Social History Review* [hereafter *IESHR*], 13(2) (1976), p. 204.

<sup>25</sup> In an address to the IMF in 1929, A.L. Ojha spoke of "a merger and combination of isolated small undertakings", and suggested an Indian version of the German Federal Economic Council, "for a better adjustment of our [ . . . ] rapidly changing economic life": *Searchlight*, 3 March 1929; and Simmons, "Indigenous Enterprise", pp. 200–215.

<sup>26</sup> *RCL*, vol. 4, part 1, p. 242.

<sup>27</sup> *ICC*, p. 116.

<sup>28</sup> David Washbrook, "South Asia, The World System, and World Capitalism", *The Journal of Asian Studies*, 49(3) (1990), p. 481. Also see J. Gallagher and R. Robinson, "The Imperialism of Free Trade", in idem, *The Decline, Revival and Fall of the British Empire* (Cambridge, 1982).

<sup>29</sup> *COI*, 1921, vol. 7, part 1, ch. 12; *BLEC*, vol. 1, p. 17, and vol. 4, part C, p. 199. Managements may have deflated the figures out of a desire to renege on housing responsibilities.

<sup>30</sup> *RCL*, vol. 4, part 1, pp. 3, 4. Contiguity implied Bengal as well, although in this case it refers mainly to Hazaribagh and Santhal Parganas.

Monghyr.<sup>31</sup> Thousands walked in to work from Hazaribagh, and the two other districts were easily accessible by rail. Many trekked in even from the non-contiguous districts.<sup>32</sup>

Of the twenty-six "most numerous castes" in Jharia,<sup>33</sup> "aboriginals" and "semi-aboriginals" comprised 48.8 per cent; "depressed classes" 20.2 per cent; and the intermediate peasant and artisan castes 22 per cent. Larger Adivasi groups such as the *Hos*, *Mundas*, *Oraons*, *Bhumij*, etc., were noticeable by their absence, the only exception being the *Santhals*. Only four categories (comprising 8.8 per cent) were of "high" status – *Brahmins*, *Rajputs*, *Pathans* and *Kayasths*. The largest single castes were *Santhals* (13.3 per cent), *Bhuiyas* (11.8 per cent), *Bauris* (11.7 per cent) and *Chamars* (9.4 per cent). The first three caste-clusters constituted 91 per cent of the workforce as a whole, and 94 per cent of the actual coal cutters, themselves a quarter of the workforce. Less than 2 per cent of the miners were "upper caste", but a fifth of them were women, as were nearly half the number of coolies who loaded and carried coal above and below ground. (Women workers were generally known as *rezas*.) The number of upper-caste coolies was negligible. Among other skilled occupations the pattern changed slightly. Seventy-one per cent of the winding and hauling enginemen and firemen belonged to the first two groups; i.e. aboriginals, semi-aboriginals and depressed classes. Upper castes dominated supervisory grades, with 78 per cent of the overmen and more than 50 per cent of the contractors. Tribals and depressed classes were less than 1 per cent of the overmen but 11 per cent of the contractors, this figure being dominated by *Bauris* and *Kurmis*. In the late 1930s Jharia's hinterland remained its main recruitment area, with 84.2 per cent recruited from Bihar (excluding Orissa). However, Manbhum's share declined by more than half in two decades – a phenomenon linked to the declining proportion of Adivasis and women. *Santhals* were down to 6.7 per cent, and *Bauris* to 5.2 per cent. Other aboriginal groups formed less than 2 per cent of the mining population.<sup>34</sup> The groups which had dominated the mines at the turn of the century were replaced by immigrants from Bilaspur, Chhatisgarh and up-country.<sup>35</sup> However, this decline was tempered by the link between ethnicity and mechanization – in

<sup>31</sup> *COI*, 1921, vol. 7, part 1, p. 106.

<sup>32</sup> *BLEC*, vol. 3 C, p. 204.

<sup>33</sup> These adjectival terms and phrases are used in Subsidiary Table 12, in *COI*, 1921, vol. 7(1), ch. 12, which is the source for the following data. The proportions are based on the number (73,241) of "actual workers". *Bauris* were considered a semi-aboriginal caste in Manbhum and an untouchable caste in Bengal and Orissa. *Kurmis* were an "aboriginal" tribe in Chotanagpur, but an intermediate peasant caste in Gangetic Bihar.

<sup>34</sup> *BLEC*, vol. 2 A-B, pp. 307–311.

<sup>35</sup> *Searchlight*, 27 March 1936. Prof. S.R. Bose's lecture on Jharia in Patna College.

1946 it was observed that manual coal cutters were mainly *Santhals* and *Bauris*.<sup>36</sup>

Women formed 37.5 per cent of the workforce in 1920. This fell to 25.4 per cent in 1929, the year that the central government ordered the gradual exclusion of female labour from underground work (90 years after their British counterparts). It declined further to 13.8 per cent in 1935 and 11.5 per cent in 1938. This trend was linked to the mechanization of loading, hauling and screening and the eclipse of Adivasi family labour – *rezas* were predominantly tribal.<sup>37</sup> Another set of statistics on coal mining for all of British India tells us that the number of women workers for every ten males was 5.6 in 1915, 6.1 in 1920, 4.8 in 1925, 2.7 in 1930 and 1.6 in 1935, rising to 3.6 in 1944, the year after the ban on female labour underground was lifted temporarily.<sup>38</sup>

Given that such a large proportion of the mining population was drawn from Jharia's immediate vicinity, the social conditions prevailing in the region acquire especial relevance. Mohapatra's study of the crisis in Chota Nagpur agriculture between 1880 and 1920 examines migration to the coalfields. The price of rice increased 150 per cent in a period during which the area suffered five famines and an influenza epidemic. Yet its population grew faster than the provincial or national rate. This was related to an expansion of arable lands under an agrarian regime vulnerable to climate and irrigation. Many households were at the mercy of fluctuating crop yields.<sup>39</sup> Seventy-five per cent of the population was indebted, and Hazaribagh and Manbhum were monocrop zones, whose peasants were seasonally unemployed. The hut in the village and the colliery lines became adjuncts of a household in which the rural location of the one effected savings on infrastructure for capital in the other. This arrangement depressed wages, because of the tendency to evaluate earnings in terms of the minimum required to keep the village household functioning. In the case of landless families this simply meant keeping a migrant alive in the coalfields. Erratic labour supply suited small collieries which opened and shut down abruptly. Miners defrayed the cost of their own reproduction, since capitalists undertook minimal responsibilities for settling labour. The history of Indian coal seems to bear out Washbrook's argument that "by increasing the competition of labour for land and subsistence", the pressures of social necessity under colonialism "increased the dominance of capital and enabled it [. . .] to cast off more and more of its responsibilities for the social reproduction of the labour force".<sup>40</sup>

<sup>36</sup> *Deshpande*, p. 21.

<sup>37</sup> *RCL*, Report, p. 127; Seth, *Labour in the Indian Coal Industry*, pp. 153 and 140–141; and Radhakamal Mukerjee, *The Indian Working Class* (Bombay, 1951), p. 82.

<sup>38</sup> *Deshpande*, pp. 18–19.

<sup>39</sup> P.P. Mohapatra, "Coolies and Colliers: A Study of the Agrarian Context of Labour Migration from Chota Nagpur, 1880–1920", *Studies in History*, 1(2) (1985).

<sup>40</sup> See D.A. Washbrook, "Progress and Problems: South Asian Economic and Social History c. 1720–1860", *Modern Asian Studies*, 22(1) (1988), p. 87.

### The sub-infeudated control of labour

The relationship between capital and wage labour was straddled by a nexus of intermediaries. Companies recruited a segment of their workforce directly – this so-called *sarkari* recruitment was the one miners preferred. However, immediate control over labour until the 1930s was exercised by *raising-contractors*, engaged for the entire process ranging from hiring (*sardari* recruitment) to the cutting and loading of coal. The owners would supply the machinery and administrative structure and pay the contractors a commission on raisings. The system had its origins in the early history of Jharia, when persons with local landed interests contracted to influence villagers to mine coal. In 1929–1930 raising-contractors accounted for about 70 per cent of Jharia's output. Mine managers legally responsible for safety, housing and compliance with mining regulations, very often had no control over the safety men, let alone the distribution of work, the payment of wages and the number of miners going down the shafts. Contractors' labour contributed about half of output till the 1930s, when financial stringency led to a decline in the system, already under criticism (in official reports) for undermining the responsibility of managements. On the eve of World War II raising-contractors still accounted for a quarter of the coal extracted in Jharia and Raniganj, but their largest employers were the railway collieries at Bokaro and Giridih, where they controlled nearly 30,000 workers.<sup>41</sup>

In some cases large-scale recruitment was done by labour-contractors – this was a variant of the raising-contractor system. The work-rhythms for both *sarkari* and *sardari* labourers were the same, although the potential for extortion was diminished in the former. Both systems relied on the *gang-sardars* (gang-masters) who advanced food and money to “their relatives, acquaintances and co-villagers and employ(ed) them in surface or underground work [ . . . ]”. *Gang-sardars* were the last link in the managerial chain. Workers themselves, they led groups 15 to 40 strong around the coalfields, supervising work and wage-receipts for a commission. Patriarchs of their gangs, they arranged for loans, adjudicated petty disputes and mediated with larger vested interests.<sup>42</sup>

The term “sub-infeudation” relates to the plethora of intermediate revenue collectors generated by the agrarian Settlement of 1793 which had granted perpetual ownership to the *zamindars* of Bengal. Under its regime, seven landed estates had emerged in the Dhanbad subdivision where Jharia lay. One of the cesses the estate-owners exacted from new lessees was called *salami*, which combined obeisance with extortion, and became a lucrative source of rentier income with the opening up of the

<sup>41</sup> *Deshpande*, pp. 33–35; and *BLEC*, vol. 1, pp. 188–190.

<sup>42</sup> From the evidence of W.C. Bannerjee, representing the Indian Mining Association, in *Rees*, p. 62. Also see *Rees*, pp. 78, 88; Seth, *Labour in the Indian Coal Industry*, p. 45; and *RCL*, vol. 4(1), p. 221.

collieries.<sup>43</sup> In 1880 the GOI recognized the landlords' title to mineral rights, anticipating that they would supervise extraction. However, an investigation in 1920 found that protective provisions were absent or not enforced, and suggested regulated leasing. Using customary authority to levy a toll upon variable capital, certain landlords also received a fee "per head of miners taken away from their villages". The Burrows Report (1937) remarked that the *zamindars* had left the future to "look after itself". Their demands for fresh *salami* payments for the secondary operation called "de-pillaring" fostered reckless extractions in first workings; and their greed for the initial gratuity payments led to the subdivision of estates into numerous irregularly shaped leases, which tied up much coal under boundaries and exacerbated malpractices such as the opening of multiple shafts to save on underground roads and the avoidance of conservation. (Jharia had a number of shallow workings with little or no machinery, which were susceptible to market fluctuations.) The Mahindra Report (1946) noted that the "small dimensions and fantastic shapes" of coal leases were also the consequence of the Revenue Department's estate boundaries, and recommended the abolition of private property in mineral rights in the *zamindari* areas.<sup>44</sup>

Landed property thus affected the mining industry as an enabling factor and a parasite. As a discrete interest it exacted a levy both from fixed and (sometimes) variable capital. As an institutional category embedded in colonial society, it entered the very structure of enterprise: certain collieries possessed service tenancies stemming from their status as estate-owners. The Bengal Coal Company held 130,000 acres in 1920, and the East Indian Railway leased lands to miners who were liable to work for 230 days a year. There were other instances of collieries using a rentier position to recruit labour.<sup>45</sup> During World War II (see section on *Coal and the state* below, p. 105), the GOI took a more interventionist approach towards the regulation of labour supply.

Miners' lives were characterized by a ceaseless mobility. Evidence rendered to the Royal Commission on Labour (1931) stressed their "primarily agricultural" nature, and the connection between labour supply and agrarian seasons. Even established collieries which had stabilized half to three-quarters of their workforces experienced seasonal absenteeism in April, July and winter.<sup>46</sup> Estimates of the proportion of miners settled in Jharia varied from 15 per cent to 25 per cent. "Recruited", or seasonal workers comprised 50 to 75 per cent; and

<sup>43</sup> See D.C. Wadhwa, "Zamindaris at Work (1793-1956)" and *idem*, "Zamindars and their Land", in Rothermund and Wadhwa, *Zamindars, Mines, and Peasants*, pp. 86-92 and 93-130.

<sup>44</sup> *Foley*, p. 3; *Rees*, p. 101; *CMC*, pp. 31, 69-71; and *ICC*, pp. 134, 273-274.

<sup>45</sup> C.P. Simmons, "Recruiting and Organising", *IESHR*, 13(4) (1976), pp. 465, 471-481; *RCL*, vols 4(1), p. 221, and 4(2), p. 143.

<sup>46</sup> *RCL*, vol. 4, part 1, pp. 16-17.

“local” or *dehati* workers, 5 to 10 per cent of the workforce.<sup>47</sup> The *dehatis* trekked in from villages within a 15-mile radius. Seasonal recruits lived in colliery lines or in makeshift huts. Until the eve of World War II, an unstable workforce was the norm. Indian magnates complained most about this: “The recruited labourers [ . . . ] retire wholesale for two seasons. It is estimated that withdrawal is responsible for the loss of about 33 per cent of what might have been their aggregate annual wages otherwise”, wrote the secretary of the Indian Mining Federation, D.D. Thacker, forwarding its suggestion that the Santal Parganas and Chota Nagpur be reserved “as the exclusive area of recruitment for the coal industry”.<sup>48</sup> Although the industry did pay for some of its social costs by means of levies which financed the Water Board, the Board of Health, road maintenance and security, this bare infrastructural contribution was grudgingly given, and not commensurate with the cost of stabilizing the workforce. The Royal Commission on Labour, 1931 (RCL) noted that the rural connection provided social and old-age security. A prominent manager endorsed this view. The “link with the village” acted as a sanatorium for the sick, he said, adding that “if we (*had*) a full supply of labour settled in the collieries, there would always be an overproduction [ . . . ] it would be a heavy burden on the industry at a time like the present one, if the labour did not have homes in the villages to which to go” (emphasis added).<sup>49</sup>

### Life and recreation in the coalbelt

It was not surprising that miners did not treat the coalbelt as a stable place of residence. Even the officials considered the company-built miners’ quarters, known as *dhowras*, “mere apologies for homes”, their surroundings “generally filthy” and their “whole appearance [ . . . ] most forbidding”.<sup>50</sup> They were ill-ventilated, unsanitary and built back to back. Piped water in some collieries had put an end to annual epidemics of cholera and smallpox, but leprosy persisted. There were no baths or latrines, and the pit water used for bathing and washing was reported “unwholesome and filthy”.<sup>51</sup> Clean water supply amounted to one tap for 60 to 80 houses. Insecurity obliged some workers to carry their belongings to work in baskets, and others to share lodgings between two families. Children and babies would either be left in the care of

<sup>47</sup> RCL, vol. 4, part 1, pp. 182, 207, 212. Also see Seth, *Labour in the Indian Coal Industry*, p. 56. The 1946 enquiry put the percentage of “permanently settled labour” in Jharia at “25 to 45”. The broad range of these figures highlights the difficulty of determining the size of the stable segment.

<sup>48</sup> RCL, vol. 4, part 1, p. 212.

<sup>49</sup> TMGL, vol. 27(2) (1933), pp. 96, 107.

<sup>50</sup> Deshpande, pp. 32, 88.

<sup>51</sup> BLEC, vol. 1, p. 195.

co-tenants, or taken along and kept opiated.<sup>52</sup> By-laws of the Jharia Mines Board of Health laying down a maximum of two adults and two children per room were ignored, with five to ten persons in occupation. Illnesses or childbirth would result in miserable domestic circumstances.<sup>53</sup> Subject to land subsidences, *dhowras* would often have to be vacated, and were known to have buried their residents. Colliery workers tended to live in clusters according to caste and place of origin. The *Santhals* preferred not to use the *dhowras* at all.<sup>54</sup> According to a budget enquiry conducted in 1938, the average mining family consisted of four persons. Most adult males, 40 per cent of adult females and 2.3 per cent of the children were working members of their families, with tribal workers contributing the highest percentage of working females.<sup>55</sup> Nearly three-quarters of total expenditure was on food. The average miner's diet in Jharia yielded 2,674 calories, as compared with the proposed calorific intake for Indian workers of 3,000 calories.<sup>56</sup> The percentage of adult males who were literate was 13.4.<sup>57</sup> The survey did not investigate female literacy and reported a prejudice against female education. Eighteen per cent of the boys and 3 per cent of the girls of school age actually attended school. Colliery schools were supposedly free, but teachers charged fees such as 2 annas per week which deterred poorer miners.<sup>58</sup> Forty-four per cent of the families were indebted to *sardars*, contractors, shopkeepers, clerks and usurers; among the worst debts being contractors' advances. Stores owned by the latter charged exorbitant prices from which miners would be pressurized to buy essential items. Hard-pressed miners would stealthily migrate. Less than a fifth of the families sent money home.<sup>59</sup>

Until the late 1920s there were no child welfare centres, maternity allowances, nor women doctors available for working mothers, who

<sup>52</sup> Seth, *Labour in the Indian Coal Industry*, pp. 164, 168, 176–178.

<sup>53</sup> *Ibid.*, p. 172.

<sup>54</sup> See Ranjan Kumar Ghosh, "A Study of the Labour Movement in Jharia Coalfield 1900–1977" (unpublished thesis, Calcutta University, 1992), chs 1.15 and 1.14.

<sup>55</sup> *BLEC*, vol. 2 A-B, p. 331. Nearly 60 per cent of the tribal and 72 per cent of Oriya (also mostly tribal) women present worked in the collieries. The statistics should be taken as indicators – the Family Budget Enquiry questioned 1,030 families.

<sup>56</sup> *BLEC*, vol. 2 A-B, pp. 353–357; Mukerjee, *Indian Working Class*, pp. 223–229. The Bengal jute worker consumed 2,752 calories, while the Bengal jail diet yielded 3,508 calories.

<sup>57</sup> *BLEC*, vol. 2 A-B, pp. 319–320. 68.6 per cent of the Lohars and Barhis, 59 per cent of the upper castes such as Brahmins, Rajputs, Kayasthas and Chhatris, and 43 per cent of the Muslims were literate. Literacy rates were the lowest among the tribals and lower castes.

<sup>58</sup> *ARCIM* (1929), quoted in Margaret Read, *Indian Peasant Uprooted* (London, 1931), p. 127.

<sup>59</sup> *Searchlight*, 27 March 1936, Prof. Bose's lecture. The *BLEC* reported peons and shopkeepers arranging with mines clerks to collect usurious dues at source, *BLEC*, vol. 1, p. 160; Also see vol. 2 A-B, pp. 344–352, 370, 442–443; and vol. 3 C, p. 229.

would be attended by *dais* in late pregnancy. These traditional midwives would be paid a few rupees and ate with the family.<sup>60</sup> In 1937 there were eleven certified midwives for the whole belt. The main development was the operation of ten maternity and child welfare centres in the area, although in 1938 only a fifth of the collieries were paying out maternity allowances (one or two annas a day). Most women workers returned to their villages for childbirth. Mortality rates among women were 6 to 7 per cent higher than their proportion in the population of the settlement, and infant mortality 7 per cent higher, during 1934–1936, than the rate for the province as a whole.<sup>61</sup>

Gambling, cock-fighting and participating in festivals were the main forms of recreation. The last was not very prominent, as many miners preferred to celebrate the major festivals in their villages.<sup>62</sup> Given their “drab and mechanical existence”, remarked an official report, “under the present circumstances, the only relaxation (the miners) can look forward to, and which [ . . . ] can make them forget the coal mine is the grog shop”.<sup>63</sup> Whereas in South Africa the mine owners made the initial investments in liquor manufacture,<sup>64</sup> in Jharia it was the administration which legalized outstills in 1932 to encourage localized production. This cheapened liquor by up to 75 per cent, and increased revenues through the auctioning and licensing of outstills and grog shops. From 1929 to 1933 the number of outlets in the Dhanbad area went up from 20 to 121, effecting a twelvefold increase in consumption.<sup>65</sup> Men and women drank heavily after being paid at weekends, and were absent on Mondays and sometimes on Tuesdays as well. In 1931 the observer Margaret Read emphasized “the harm done, particularly to the aboriginal population by the sale of spirits”.<sup>66</sup> By the mid-1930s owners were complaining about the “drink evil”. In 1939 the Bihar Labour Enquiry Committee reported:

On any Sunday evening, one could encounter [ . . . ] groups of miners intoxicated with drink tumbling down the road [ . . . ] most confessed to us that they could not give up [ . . . ] but they would not mind and would rather be happy if the drink were stopped altogether [ . . . ] We note, with satisfaction, that the

<sup>60</sup> RCL, vol. 4, part 2, pp. 111, 134, 138 and 150.

<sup>61</sup> Seth, *Labour in the Indian Coal Industry*, pp. 190 and 198.

<sup>62</sup> See Ghosh, “A Study of the Labour Movement”, pp. 76–77.

<sup>63</sup> *Deshpande*, p. 86.

<sup>64</sup> See Charles van Onselen, “Randlords and Rotgut” in idem, *Studies in the Social and Economic History of the Witwatersrand 1886–1914*, vol. 1 (Johannesburg, 1982).

<sup>65</sup> There had been a 56 per cent decline in excise revenue between 1923 and 1932. With the new system, revenues increased and liquor consumption rose from 30,924 gallons in 1931 to 376,000 gallons in 1933: Seth, *Labour in the Indian Coal Industry*, pp. 243–245.

<sup>66</sup> Read, in *Indian Peasant Uprooted*, pp. 119–120. The RCL also provided figures to illustrate “the extent of the present evil”.

Government has introduced prohibition in Jharia from the 1st of April 1939 [ . . . ]<sup>67</sup>

The proportion of budgets spent on drink increased from 13 per cent to 20 per cent between 1929 and 1934, affecting entire families. The trend was linked to child prostitution, absenteeism, malnutrition, a high rate of minor accidents and declining productivity. In 1940 there was little evidence that prohibition (which lasted only one year) had curbed drunkenness or illicit distillation.<sup>68</sup> Two-thirds of the families surveyed in 1938 reported the consumption of liquor, which cost them 16 per cent of their monthly incomes. Ninety-four per cent of the families consumed tobacco. Other inebriants included *handia* (rice beer), toddy, opium, *ganja* and *bhang* (hemp derivatives).<sup>69</sup>

The social knowledge of the managers was a mixture of racial prejudice, ideas about the mean status of work in the mines, and apparently altruistic judgements about its civilizing effects. Their stereotypes generally reinforced the structures of employment. A mine manager in 1894 was in no doubt that “*Bauris* are dirty and have no moral courage” and that “*Santhals* are brave but stupid”.<sup>70</sup> A 1913 article on labour begins with the assertion that “There are probably no other coalfields in the world where the habits, peculiarities and superstitions of the labour force have more to be studied than in ours”, and is full of terms such as “semi-savage” and “low-class Hindu gipsy tribe”. It explains the *Santhals*’ aversion to living in the *dhowras* by way of an anecdote in which the miners interpreted the deaths of two of their mates as the work of devils residing under the floors of their quarters. These were dug up and exorcisms performed on the orders of the manager. The author praises his pragmatism for falling in “with the superstition of the men” to prevent the migration of the gang. He went on,

It is chiefly on account of this and other superstitions that the above races do not prefer to live in barrack-like houses with pucca floors, though as time goes

<sup>67</sup> *BLEC*, vol. 1, pp. 196–197.

<sup>68</sup> Seth, *Labour in the Indian Coal Industry*, pp. 244, 248, 251.

<sup>69</sup> *BLEC*, vol. 1, p. 196; and vol. 2 A-B, p. 366. Muslim families consumed little liquor, but showed the highest expenditure on tobacco. *Manjhis*, *Dusadhs* and *Bauris* were reported to be “the most regular drunkards”. Mukutdhari Singh asserted that one-fourth of miners’ incomes was spent on liquor: *BLEC*, vol. 4 C, p. 271. The RCL estimated expenses of a million rupees on drink and drugs in the Dhanbad colliery area in 1928: *RCL*, Report, p. 121. Lower prices led to 1.2 million rupees being spent on liquor in 1934: J.E. Copeland, *Enquiry into the Outstill System in Bihar and Orissa*, quoted in Seth, *Labour in the Indian Coal Industry*, p. 244. Till 1940 there was little evidence that prohibition, introduced in 1939, and which lasted a year, had curbed drunkenness or illicit distillation: *ibid.*, p. 251.

<sup>70</sup> Communication from Walter Saise, E.I.R. Colliery Manager, Giridih, in *Report of the Inspector of Mines in India for the Year Ending the 30th June 1894* (Calcutta, 1894), pp. 51–53.

on and the younger generation gets more civilised, the present objection will probably pass away.<sup>71</sup>

An Indian manager in 1918 suggested the recruitment of convicts, “which would fetch a very good income for the Government, (whilst) [ . . . ] improving their morality and [ . . . ] decreasing crime”.<sup>72</sup> The author of a housing plan stated that it was the “labourers’ insanitary habits” and trips to their villages which brought about the unsavoury state of housing. His scheme kept “the different castes separate from one another” and, in accord with the observation that “Santhals and Koras (have) an aversion to living in a line of attached huts”, his diagram included discrete dwellings in the “Santhal Dhowrah”, in contrast to the unbroken line of *dhowrahs* for the *Bauries*, *Kahars* and *Gopes*.<sup>73</sup> The 1894 manager endorsed hereditary immobility:

A child of 8 years is fit to work [ . . . ] little girls and little boys should go into the mines early and become accustomed to carrying coals [ . . . ] it is questionable whether children should be educated [ . . . ] they would not, afterwards work as coal-cutters, but try to get other work [ . . . ] those who can read and write will never cut coal; on the other hand, they take a most important attitude, and demand respect from everybody [ . . . ]<sup>74</sup>

### The work process and its remuneration

Coal mining has distinctive characteristics. Mines are wasting assets and best worked to exhaustion, since stoppages increase physical risks. The recession of workfaces requires regular maintenance, as do water pumping and timbering. The chemistry and friability of the coal, and the presence of gas and dust need to be monitored constantly, as high moisture and volatility are conducive to oxidation and spontaneous combustion. The physiognomy of the seams determine mining strategies – Jharia’s were shallow, inclined, gassy and congested with eighteen proximate seams, some of them 60 to 80 feet thick. Thick seams require “pillar and stall” extraction, galleries being forced into them, with pillars interspersed to be removed later. In the 1930s, Jharia’s pillars were contributing more coal than its galleries, but unsystematic techniques had led to the formation of excessively tall pillars, more liable to heating and collapse.<sup>75</sup> Buchanan, whose researches were conducted in the late 1920s, found this matter significant enough to merit detailed comment.

<sup>71</sup> E.C. Agabeg, “Labour in Bengal Coal Industry”, *TMGI*, 8 (1915), pp. 25, 27, 29, 33, 35–38.

<sup>72</sup> Evidence of D.N. Das, General Manager of Bannerjee & Co., in *Rees*, p. 78.

<sup>73</sup> J.H. Evans, “Housing of Labour and Sanitation at Mines in India” *TMGI*, 12 (1918), pp. 79–89, with attached plates.

<sup>74</sup> Communication from Walter Saise in *Report of the Inspector of Mines in India* (1894), pp. 51–53.

<sup>75</sup> *CMC*, pp. 12–20, 35–49.

At one place in Jharia, he notes, there are 105 feet of coal in five seams within the first 402 feet of ground. Although thick seams are popular with miners, in India they are too thick, for the great height of the props required to support the roof makes the removal of all the coal impossible. Hydraulic stowing was possible, he said, but rarely used. When the pillars are removed, the surface settles, and about a third of the coal is lost.

The great weight on these pillars, as well as the character of the coal, frequently results in crumbling and falls dangerous to the miners. It also leads to spontaneous combustion and fires become so serious as to endanger entire areas. In some fields the cave-ins are suggestive of great canyons and the escape of smoke and steam through crevices is so like smouldering volcanoes and so dangerous that not only is mining impossible but there is great danger to life and property in the neighbourhood. These dangers become intensified as the mines are worked to greater depths.<sup>76</sup>

The main occupations were cutting, loading, bailing water and tramping. Most coal was manually cut – in 1944 there were only 210 mechanical cutters in 75 of the 910 mines in India. Some mines used pneumatic drills. Until the 1920s many small mines were using manually operated gins and capstans. Atmospheric conditions were not regulated and ventilation depended mainly upon the arrangement of galleries, leading to extreme temperatures. None of the collieries provided the required drinking water and sanitation. Many miners drank water from the seams and defaecation underground caused hook-worm infections through bruises in bare feet. First aid kits were sadly lacking.<sup>77</sup>

Only 6 per cent of Jharia's mines were electrified. Movement between workfaces, which could number up to seventy and be located as much as two miles away from each other, was rendered difficult with many sectors in darkness. There were 28,835 safety lamps in use in Jharia in 1942 (an increase of over 20,000 since 1929), but illumination was in the main dependent upon naked kerosene lamps known as *kuppis* or *mugbathis*, 90 per cent of whose illumination was absorbed by the surroundings. About a quarter of all miners suffered from forms of nystagmus, a disease caused by deficient lighting and resulting in photophobia, eyeball oscillation, vertigo, depression and headaches. The activity known as "holing" (undercutting coal by lying supine and concentrating upwards), put a particular strain on the elevator muscles of the eyes. Sometimes the change-over to electric lighting aggravated latent

<sup>76</sup> Buchanan, *The Development of Capitalistic Enterprise in India*, p. 260.

<sup>77</sup> Ghosh, *Coal Industry*, pp. 148, 152–154; Seth, *Labour in the Indian Coal Industry*, p. 30; Deshpande, pp. 41–45; R. Das Gupta, *Labour and Working Class in Eastern India* (Calcutta, 1994), p. 194; and Read, *Indian Peasant Uprooted*, p. 123. The lack of stretchers could aggravate bone injuries. The problem was made worse by the absence of pit telephones.

cases of the disease but even the bulbs used supplied less than one candle-power.<sup>78</sup>

For many years collieries depended upon piece-rated family labour, with women and children performing auxiliary tasks. Most women worked with male relatives. In specific jobs they were called *kamins*, a term signifying the performance of service. Gangs usually broke up into pairs, the hewers, or *malkattas* cutting the coal, and *kamins* walking long distances with baskets on their heads to load it. In 1921 some 40 per cent of the workforce were classed as “skilled”, and included miners, mechanics, enginemen, firemen, carpenters and bricklayers.<sup>79</sup> Other categories included “coolies” working on haulage; maintenance apprentices (*khalasis*); masons, drillers and shot-firers, blacksmiths, boilermen, lamp-boys, carters and carriers, ash-cleaning *kamins*, shale-pickers, store-keepers, switch-men, power-house men, processors of coke, and horse-boys. A day’s work by a miner and loader produced 2.6 to 3 tubs. Some supervisors earned bonuses on output exceeding standard-load multiplied by the number of tubs filled – a blatant incentive to cheat.<sup>80</sup> Clerical graft combined with tub shortages to breed atomization and the intensification of labour. If the miners cut coal without tubs on hand, they risked losing it. Deductions included fines for stones in the coal, for sleeping or coming late and the cost of explosives. A third of earnings could be lost this way,<sup>81</sup> and they could also be affected by the overstaffing of gangs to absorb excessive labour supply. Wage-rates varied up to 50 per cent in adjacent collieries depending on the nature of the seams. Ventilation, tub-availability, hardness and gallery dimensions affected miner’s attitudes towards the wages offered.<sup>82</sup>

Piece-rates were ubiquitous, and combined with mediate forms of supervision to enable cheap extraction. Workers could be dismissed, wages reduced and uncertain labour supply dealt with by maintaining reserves of raised coal.<sup>83</sup> When the RCL recommended a minimum

<sup>78</sup> *Deshpande*, pp. 43–44; Appendix IX.

<sup>79</sup> *COI*, 1921, vol. 7, part 1, p. 272.

<sup>80</sup> *RCL*, vol. 4, part 1, pp. 58–59, 206 and 216. The standard tub size was 30 cubic feet, but collieries used sizes from 27 to 40 cubic feet. Thirteen hundredweight of coal was the standard load, but this varied, giving clerks scope for under-assessment: Seth, *Labour in the Indian Coal Industry*, pp. 116–117; *BLEC*, vol. 4 C, pp. 253–255. The RCL recommended weight and tub-uniformity (Report, p. 123), but in 1939 none of the managements was using weighing machines. For their part, the miners resisted innovations such as double-headed picks and tin lamps, and thought of weighing machines “as an invention of the evil one”: Seth, *Labour in the Indian Coal Industry*, p. 9.

<sup>81</sup> *Ibid.*, chs 5 and 7; pp. 79, 112; *RCL*, Report, p. 121; and *BLEC*, vol. 4 C, p. 246.

<sup>82</sup> Seth, *Labour in the Indian Coal Industry*, pp. 61–67. The RCL singled out the railways’ collieries in Giridih for unhealthy working conditions: *RCL*, Report, pp. 115, 134.

<sup>83</sup> Even when the raising contractor system began to decline, in the mid-1930s, recruiting and gang *sirdars* remained, along with the piece-rates.

tub-credit, owners protested that it was the piece system alone that obtained "any useful effort from the aborigine miner".<sup>84</sup> The rail companies also opposed the idea, drawing support from the Inspector of Mines and the Railway Board who cited the existence of raising-contractors as an impediment to the scheme. The GOI rejected the recommendation in 1933.<sup>85</sup> However, miners' unrest in the late 1930s and a labour shortage during the war highlighted the need for a stable workforce. The Report of 1946 suggested that "a fair wage to labour (should) form the starting point for price fixation".<sup>86</sup>

Twelve-hour shifts were permitted in mining until 1935. Certain gangs worked for twenty-four hours with breaks underground – a pattern which suited those who trekked in from nearby villages.<sup>87</sup> Some managers and engineers favoured mechanization, training and stabilizing the workforce, regular shifts, time and motion studies and a stricter work regime; while others were satisfied with the "idiosyncrasies" of "the Indian miner", suggesting that the proposal for regular hours "savour(ed) of slave-driving".<sup>88</sup> In the late 1930s, the nine-hour limit on shifts was scarcely enforced, while actual hours worked fell short of the limit of fifty-four hours per week underground, indicating that many miners worked long spurts within short weeks. The 1946 enquiry spoke of "flagrant" violations of the Mines Act with respect to hours of work, citing instances of miners working second shifts on the same day under assumed names. It also reported that wages continued to be paid on Sundays despite the RCL's opposition to the practice. Apart from this, loaders were often forced to overload tubs by the *munshis* and *sardars* who profited from the excess. Pay-clerks would make payments in round figures on the ground of shortages of change.<sup>89</sup> Gang-*sardars* bribed clerks for suitable seams, contractors bribed executives and owners paid *salami* to

<sup>84</sup> RCL, Report, p. 122; and "Memorandum submitted by the Indian Mining Association in connection with the recommendations of the RCL in India": File M-1265 (14), 1933, Dept of Industries & Labour, NAI. The Memorandum continued: "The Indian coal miner is, generally speaking, an aborigine, whose ethical concepts – or want thereof – would not give him understanding to the need of an honest effort in return for a provided wage".

<sup>85</sup> Comment dated 20 May 1932 by the Chief Inspector of Mines in File M-1265 (14), 1933, Dept of I&L, NAI; and Order by A.G. Clow, dated 1 November 1933, in File M-1265 (14), 1933, Dept of I&L, NAI. On 17 August 1933, the new Inspector admitted that wages could be "deplorably low", but opined that statutory raises would lead to closures, and an increase in unemployment – a strange argument, given the notoriously unstable patterns of employment.

<sup>86</sup> ICC, p. 268.

<sup>87</sup> *TMGI*, 11 (1917), pp. 130–131; *Foley*, p. 13; *Seth, Labour in the Indian Coal Industry*, p. 15.

<sup>88</sup> "Discussion on Glen George's Paper on Development of Deep Coal Mining in Bengal", in *TMGI*, 11 (1917), pp. 115, 120, 130–132.

<sup>89</sup> *Deshpande*, pp. 109, 60.

the *zamindars*. This endemic graft signified the nexus within which the colonial system obtained its fuel. Managements did not notice the “want of ethical concepts” among their supervisory staff.

Women workers bore the brunt of the consequences of the coal slump and mechanization (see section on *The demography of employment* above, p. 89). Their impoverishment impinged upon living conditions in the coalbelt, and their exclusion from underground work in October 1937 had an adverse effect. Competition intensified amongst them for surface jobs. Family incomes went down by about 40 per cent due to this factor as well as to a decline in wage-rates. Significantly, some managers considered their withdrawal a convenient means of curbing over-production.<sup>90</sup> Women ceased accompanying their menfolk to the coalfields, and there was greater seasonal migration. Observers commented upon the increase in prostitution. One positive effect appeared to be the decline in the opiating of children.<sup>91</sup>

The need to improve conditions was noted by the RCL,<sup>92</sup> but the industry remained conservative. In a discussion at the Mining Institute in 1932,<sup>93</sup> the Commission’s recommendations were rejected by managers. Arguments were aired about earnings being a function of the miners’ volition,<sup>94</sup> their unreasonable attitudes regarding tubs, the sums they spent on drink and their unwillingness to work for longer than four or five days a week, “the obvious reason being that the extra wages were not required”. Low stamina and efficiency were deemed part of the “hereditary characters” of the Indian miners. The two Indian participants and the Inspector of Mines, R.R. Simpson, insisted that low wages and inadequate diets were responsible for deteriorating health and an incapacity to work harder. “From the remarks made by certain speakers”, added Simpson, “it would seem that in their opinion, the lower the wages of the miner, the happier he will be.”<sup>95</sup>

Despite the slow development of their unions, the miners were not passive. The Mines Board of Health was created in 1914 after desertions

<sup>90</sup> See Seth, *Labour in the Indian Coal Industry*, pp. 150, 146–165; and J. Thomas’s remarks in the discussion of R.R. Simpson’s paper, “The Social Conditions of Miners in India”, in *TMGI*, 27(2) (1933), p. 124.

<sup>91</sup> *Searchlight*, 27 March 1936. Prof. Bose’s lecture.

<sup>92</sup> *RCL*, Report, p. 119.

<sup>93</sup> Simpson, “The Social Conditions of Miners” and discussion, *TMGI*, 27(2) (1933), pp. 89–139.

<sup>94</sup> In their evidences before the RCL, owners often argued that miners were content with the earnings of a short week and that better wages would exacerbate drinking and indebtedness: “the wages of miners are controlled by the miners themselves [ . . . ] when wages were increased [ . . . ] (they) [ . . . ] put in less work”. See *RCL*, vol. 4, part 1, pp. 217, 247, 233, 254–255. The Indian Mine Managers Association, however, stated: “wages paid have no relation to the profits earned”, and that improved conditions would increase output. Also see *BLEC*, vol. 4 C, p. 273; and vol. 3 B, book 3, p. 59.

<sup>95</sup> Simpson, “The Social Conditions of Miners”, *TMGI*, 27(2) (1933), p. 138.

in the wake of deaths due to cholera.<sup>96</sup> Miners were known to leave empty spaces in the bottoms of their tubs and cheat on advance food allowances by taking these from more than one contractor.<sup>97</sup> They also used officially provided opportunities to express grievance: "I am amazed at the amount of work I have done already, how can I do more?" remarked a miner to the RCL,<sup>98</sup> whose visit to the East Indian Railways' mines at Giridih became the occasion for protest actions by 2,000 miners, who took initiatives in striking, picketing and mobilizing sympathy strikes.<sup>99</sup>

Complaints by English managers about "labour" provide the historian with a point of reflection. In their view, it was the psycho-ethnic character of Indian miners and their apparent economic *autonomy* which resulted in low earnings. This may be gleaned from comments such as: "*the ethical standard of aborigines and semi-savages is hardly compatible with the principle of a minimum wage*" (emphasis added); "As commodity prices fall, the miner is content to earn less"; "the Indian miner and his family can live according to custom on ten hours of effective man-hours per week [ . . . ] In England [ . . . ] 40 hours is barely sufficient [ . . . ]"; "The Indian miner (is) able to support himself for long periods [ . . . ] from the bountiful resources of the country, thereby still further reducing his effective man-hours in the mines"; "Mine owners in England are protected by law against absenteeism and malingering, but in India, owners are absolutely at the mercy of the labour", etc.<sup>100</sup>

What may we make of these remarks? In Jharia, for the greater part of our period, coal was won through family labour working on piece-rates, and through congeries of small-scale activities. Extraction proceeded in reverse tandem with agrarian seasons, and on a weekly basis the workday was influenced by the variegated preferences of the labour force.<sup>101</sup> These methods signified the emergence of an industry which

<sup>96</sup> RCL, vols 4(2), p. 179; and 4(1), p. 234; Mukerjee, *Indian Working Class*, p. 26; Seth, *Labour in the Indian Coal Industry*, pp. 53–56.

<sup>97</sup> BLEC, vol. 3 B, book 3, pp. 246, 250 and 282.

<sup>98</sup> Miner Sakaram, speaking for himself, Kamrai and Jarimiyam, to the RCL, on 25 January 1930: RCL, vol. 4, part 2, p. 170.

<sup>99</sup> The summer of 1932 saw some 4,000 miners of Tata's colliery in Jamadoba strike against cuts in wage-rates. For more information about these movements see D. Simeon, *The Politics of Labour Under Late Colonialism: Workers, Trade Unions and the State in Chota Nagpur, 1928–1939* (New Delhi, 1995), ch. 4.5, and ch. 6, section 2.

<sup>100</sup> TMGI, 27(2) (1933), pp. 122–126.

<sup>101</sup> Referring to migrations to Bombay in the mid-nineteenth century, Jan Breman remarks that the phenomenon "was probably more a result of the seasonality of the urban economy than of the rural". In Jharia, however, the characteristics of the workforce and the industry complemented each other. Despite their complaints about the irregularity of labour, the "instability" of the workforce suited the capitalists, even though their interests varied with the scale and location of the operation, the degree of mechanization, and the radius of recruitment: Breman, *Labour Migration and Rural Transformation in Colonial Asia* (Amsterdam, 1990), p. 9.

did not need to adhere to the Western calendar or to clock time. What the managers perceived as the lack of total control over labour was an aspect of the colonial mode of regulation – it was compensated for by an aggregate mechanism adequate for the needs of the system as a whole. The persistence of irregular working days, when seen in conjunction with the overall “instability” of labour supply, expressed the normalization of a regulatory practice. In Thompson’s words, “attention to time in labour depends [ . . . ] upon the need for the synchronisation of labour”. The prevalence of small-scale work processes, without an intricate subdivision of jobs, did not demand such synchronization.<sup>102</sup>

### Contingent accidents

The industry reacted to the global coal depression of the 1920s by production increases, wage cuts and infrastructural savings. (Internal fragmentation prevented trade combinations.) Between 1926 and 1935, output in nine major companies rose by 80 per cent, whereas depreciation costs, raising costs and wages fell by 66 per cent, 46 per cent, and 45 per cent respectively.<sup>103</sup> Safety became an urgent subject and the contents of contemporary debates highlight the connection between the institutional and technological aspects of mining. A Subsidence Committee (1929–1935) warned that if sand-stowing and the control of gallery height and initial extraction were not enforced, collapses and spontaneous combustion were inevitable. The Coal Mining Committee noticed risks “which would not have been possible with less ignorant labour”, estimating “avoidable waste” in the two coalfields at 50 per cent.<sup>104</sup> The 1930s saw a dramatic growth in casualties and accidents in mines run by the railways and agencies.

At a seminar in 1929 the Chief Inspector of Mines argued that immediate conservation measures were necessary to forestall the “inevitable” loss of half of Jharia’s coal.<sup>105</sup> Seminarists asked why state railways did not implement his suggestions, and insisted that small average property sizes in Jharia and the low selling price of its coal made sand-stowing too expensive. The railways’ collieries had “enhanced the wastage of coal by lowering the selling price”, making “cheap mining indispensable to profit earning”.<sup>106</sup> In 1930 the Indian Mine Managers’ Association asked the GOI to enforce sand-stowing to forestall subsidences and

<sup>102</sup> E.P. Thompson, “Time, Work-Discipline and Industrial Capitalism”, in *idem*, *Customs in Common* (London, 1991), p. 370.

<sup>103</sup> Ghosh, *Coal Industry*, pp. 63–67; *CMC*, p. 26; *ICC*, pp. 20–21, 118.

<sup>104</sup> *CMC*, pp. 27, 35–41.

<sup>105</sup> R.R. Simpson, “The Future of the Jharia Coalfield”; and “Discussion on Mr Simpson’s Paper”, in *TMGJ*, 24 (1930), pp. 110–114, 114–146 and 226–257.

<sup>106</sup> J.E. Phelps’s comments on Simpson’s paper, in *ibid.*, p. 140.

fires.<sup>107</sup> Such proposals had previously been abandoned on account of financial hurdles and the problems of imposing standard cesses. In this instance, opposition from the industry was also cited.<sup>108</sup> An official noted that “the present low selling price of coal is ascribed partly to competition with Railway-owned collieries [ . . . ] producers apparently consider that if the Govt. wish to conserve their supplies [ . . . ] it is for the Govt. to pay [ . . . ]” Estimating that freight rebates alone would cost the railways a four million rupee annual reduction in earnings, he ruled out subsidized conservation, “especially during present financial stringency”, drawing comfort from the fact that high grade coal reserves in India were calculated as sufficient for over a century.<sup>109</sup>

With the government unwilling to effect any drastic reforms in a system which provided cheap fuel to its transport network, and coal magnates with not much to worry about by way of strict state supervision, the logic of the colonial mode of regulation developed unhindered, and with disastrous consequences. The decade 1930–1940 witnessed 8,981 serious and fatal accidents in coal mines, an increase of 66 per cent over the previous decade. The number of miners either fatally or seriously injured was 9,710, compared with 5,846 during 1920–1930.<sup>110</sup> An explosion in Poidih colliery in the adjacent Asansol field in 1936 killed 210 persons:

A loud report was heard on the surface [ . . . ] the cage which had been at the bottom of the shaft [ . . . ] had been blown [ . . . ] into the headgear, a distance of over 700 feet [ . . . ] the bonnets of three safety lamps which had probably been those used at the bottom of the shafts were also found on the surface [ . . . ]<sup>111</sup>

That these events were not simple accidents was indicated in the currency of the term “slaughter mining” to describe business strategies then in vogue. But when the experts spoke of “slaughter”, they were referring to what was happening to the coal seams, rather than to those who worked them.

### Coal and the state

During World War II, it has been said, the GOI became “a large scale interventionist machine”.<sup>112</sup> With regard to coal an interventionist stance

<sup>107</sup> File M 76 (19), 1931, Dept of I&L, NAI. Letter from J. Dholakia, Association President, dated 19 September 1930.

<sup>108</sup> File M 76 (19), 1931, Dept of I&L, NAI. Notes dated 23 January 1931 and 7 March 1931.

<sup>109</sup> File M 76 (19), 1931, Dept of I&L, NAI. Comments by the Chief Inspector of Mines, dated 1 April 1931, and by (signature illegible), dated 10 October 1931.

<sup>110</sup> See Ghosh, *Coal Industry*, p. 162. These figures are for mines all over India.

<sup>111</sup> *ARCIM* (1936), p. 23.

<sup>112</sup> D. Rothermund, “Problems of India’s Arrested Economic Development Under British Rule”, in Clive Dewey (ed.), *Arrested Development in India: The Historical Dimension*

had appeared in official texts soon after the end of World War I. Thus, in 1920 the Foley Committee asked the state "to step in and prevent the dissipation of the country's resources".<sup>113</sup> The Burrows Report of 1937 criticized the notion of an "economic man" actuated by self-interest", drew attention to the "world-wide trend away from the competitive ideal towards formulas of public control", and lauded Germany and France for state regulation of coal mining.<sup>114</sup> Nevertheless, it required the shock waves of national upheaval and international conflict to shake the GOI out of its apathy. In 1937, nationalist provincial ministries emerged across India. The following year saw an upsurge of labour movements. In Jharia lightning strikes erupted over demands relating to harassment, graft, working and living conditions, and benefits. Interests crystallized on both sides of the class divide. Indian coal magnates consolidated with British managing agents. In the mining settlements Congressman Abdul Bari's extreme speeches roused the working population as never before, and the left-wing slogans heard at miners' meetings alarmed the administration. *Rezas* were active at pickets and in some strikes there were instances of water-pumping being sabotaged. These movements achieved the recognition of miners' unions such as the Chota Nagpur Mazdur Sangh.<sup>115</sup>

The outbreak of war enhanced the importance of coal as a strategic commodity. The period 1937–1942 witnessed increasing demand and better prices, and from 1939 onwards the provincial government began interventions to settle ongoing conflicts in the industry. Employers were cajoled to concede a war allowance, and a cess collected towards a welfare fund. Even the long-expressed wish of the miners to see an end to the system of mediated recruitment began to be fulfilled (although not by design) – by 1946, over 60 per cent of the workers of Jharia were being recruited directly, signalling the decline of contractorship.<sup>116</sup> These changes demonstrated official concern to ensure the continuity of coal supply. Thus the effects of inadequate plant replacement during the 1930s and a wartime wagon-shortage, coupled with the movement of workers into better-paid ordnance jobs, led to a 4 m.-ton shortfall in coal production during 1942–1943. Thereupon women were permitted underground again (1943), and the government launched the Coal Con-

(New Delhi, 1988), p. 8. From 1930 onwards, in an effort to widen the market for inferior grade coals, the Indian Soft Coke Cess Committee began refuting the prejudice against food cooked on soft coke. Citing the Bengal Smoke Nuisance Commission and the Ahmedabad Committee on Smoke Nuisance it propagandized against dung cakes and wood by highlighting their polluting effects in urban areas (*ICC*, pp. 47–48).

<sup>113</sup> *Foley*, pp. 5–6.

<sup>114</sup> *CMC*, pp. 96, 102.

<sup>115</sup> For miners' movements in the 1920s and 1930s, see Ghosh, "A Study of the Labour Movement", and chs 4.5, 6 section 2, 8.8, 8.11 and 9.11 of my *Politics of Labour*.

<sup>116</sup> *Searchlight*, 5, 9, 13 and 20 December 1939; Mukerjee, *Indian Working Class*, p. 26; and *ICC*, pp. 251–253.

rol Scheme (1944) and the Young Plan, under which miners were given an attendance bonus in cash along with a grain ration. The newly established Raniganj Coalfields Central Recruiting Organisation and the Directorate of Unskilled Labour Supply began contracting workers and housing them in dormitories fenced with barbed wire. These schemes were meant to fulfil the objects of the Labour Recruitment Control Order of 1944, to regulate recruitment in designated areas "to ensure that there is ample supply of labour for collieries". The Defence of India Rules (1942) empowered government to enforce adjudication and prohibit strikes. Between 1942 and 1945, the GOI issued seven Ordinances pertaining to coal mining. Jharia reached its highest production level of 16.59 m. tons in 1945.<sup>117</sup>

State intervention in labour-management relations was quite visible when there was an impelling motive. But the GOI began to investigate the basic disorganization of the industry<sup>118</sup> only on the eve of the transfer of power. Thus far, policy had been dictated by the necessity of fuelling transport, facilitating the operations of the agencies and allowing *zamindars* to exact ground-rent regardless of the consequences. Commercially relevant recommendations were implemented, but on structural matters state policy "continued to be one of *laissez-faire*", and the industry encouraged this stance.<sup>119</sup> The Burrows Committee had been appointed in the aftermath of the accidents of 1936. Its insistence on sand-stowing, coupled with the unrest of 1938, had pushed government towards implementing limited safety measures in November 1939. But on wages, working conditions, coal conservation and land leasing the Burrows recommendations, along with those of other commissioned enquiries, were ignored. Thus in 1940 the BLEC criticized agency management, asked for an investigation into the railways' role in price fixation and, after citing state subsidies of coal exports in Britain, asked the GOI to discard its "faith in *laissez-faire*".<sup>120</sup> The Mahindra Report of 1946 asked for a National Coal Commission, citing the Tennessee Valley Authority, the British Coal Commission and the nationalization of British coal. It is a measure of the stamina of colonial production relations that these

<sup>117</sup> See B.M. Prasad, *Second World War and Indian Industry 1939–45* (Delhi, 1992), pp. 71–74, 257–259; M. Kumaramangalam, *Coal Industry in India: Nationalisation and Tasks Ahead* (New Delhi, 1973), pp. 47, 72–73; Simmons, "Recruiting and Organising", p. 457; *Deshpande*, pp. 55–56; Hans Raj, *Executive Legislation in Colonial India 1939–1947* (Delhi, 1989), pp. 40, 94–96, 121; and ICC, pp. 20–21. For the text of the GOI's Labour Recruitment Control Order of 1944, see *Deshpande*, Appendix VII.

<sup>118</sup> Coal distillation yielded coke, tar, naphthalene, combustible fuels, benzene and toluene, an ingredient of TNT. Yet in 1945, only 18.25 per cent of the coal consumed was being processed into coke, gas, tar, ammonia and light oils – the remainder being burnt as fuel. The production of road tar in India was a bare 50,000 tons per annum (ICC, pp. 227–231).

<sup>119</sup> ICC, p. 20.

<sup>120</sup> BLEC, vol. 1, pp. 205–206.

voices were only paid heed to a quarter of a century later, when Indian coal companies were nationalized in 1972–1973.

In 1995, a week before the 125th anniversary of Gandhi's birth, headlines about Jharia appeared once more in Indian newspapers: "75 feared killed in Dhanbad mines disaster"; "Figures speak of failing safety norms"; and "Mine tragedy man-mady".<sup>121</sup> In 1994, the press had reported the death of fifty-five miners. All these stories spoke of managerial negligence – after the latest case, arrest warrants were issued for colliery executives. In the 1994 "accident", miner Mukhi Dusadh had tucked a note under his wrist-watch: "It is now 10 pm. Though we are trying to save ourselves, I do not see any chance of escaping the clutches of death which is closing in on us".<sup>122</sup> The fate of the miners of Jharia is a reminder of the deadly ramifications of modernity's appetite for fossil fuels. Did the relations of production in the coalfields of Bihar reach unprecedented levels of ossification in colonial times? An answer may be read in Mukhi's message for posterity and in the flames of the still-extant Jharia underground fire.

<sup>121</sup> *Indian Express*, 28 and 29 September 1995; and *The Hindustan Times*, 1 October 1995.

<sup>122</sup> *The Times of India*, 28 January 1994.