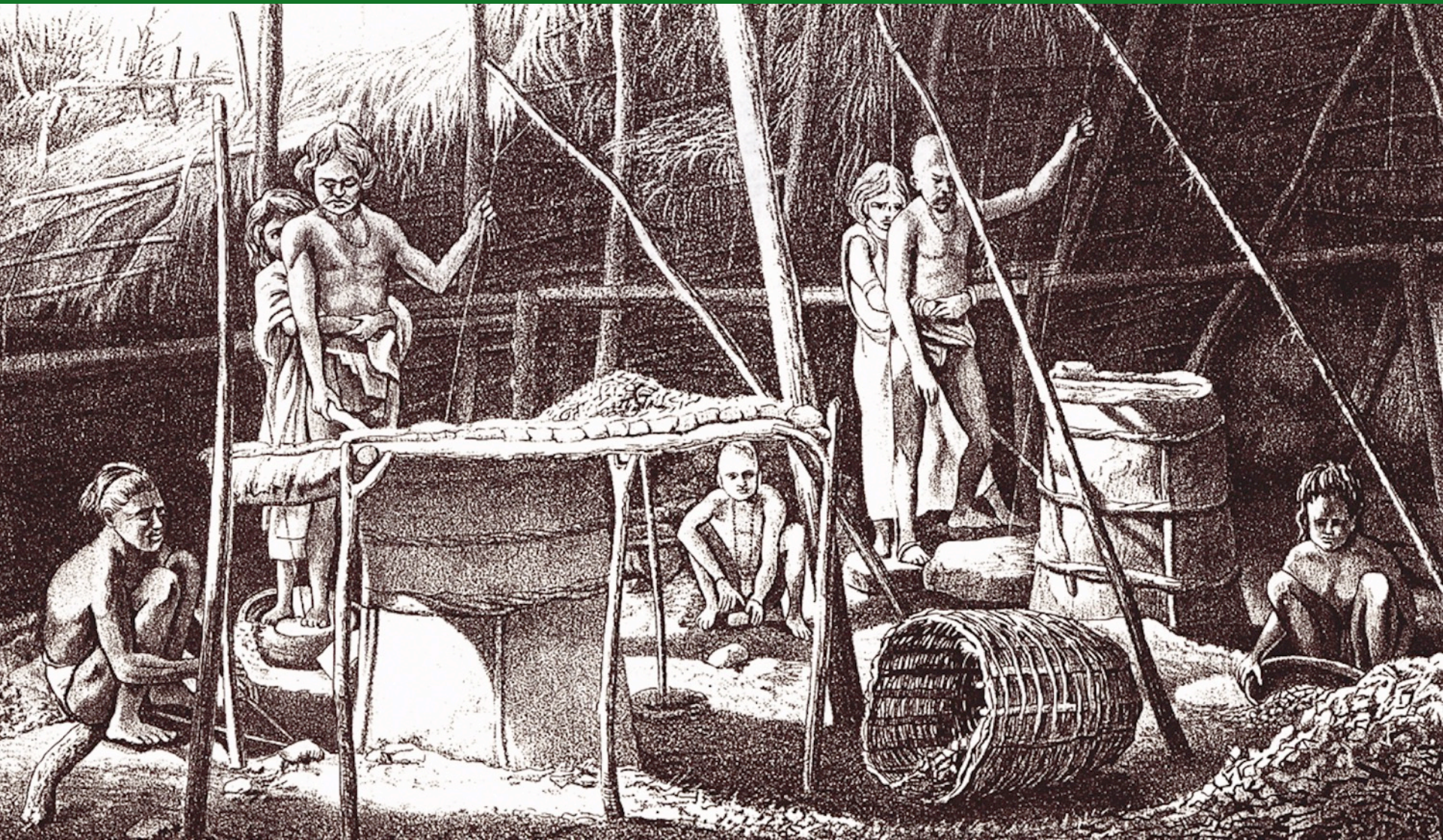


Tradition and innovation in the history of iron making: an Indo-European perspective

*Jan af Geijerstam
TICCIH Sweden*

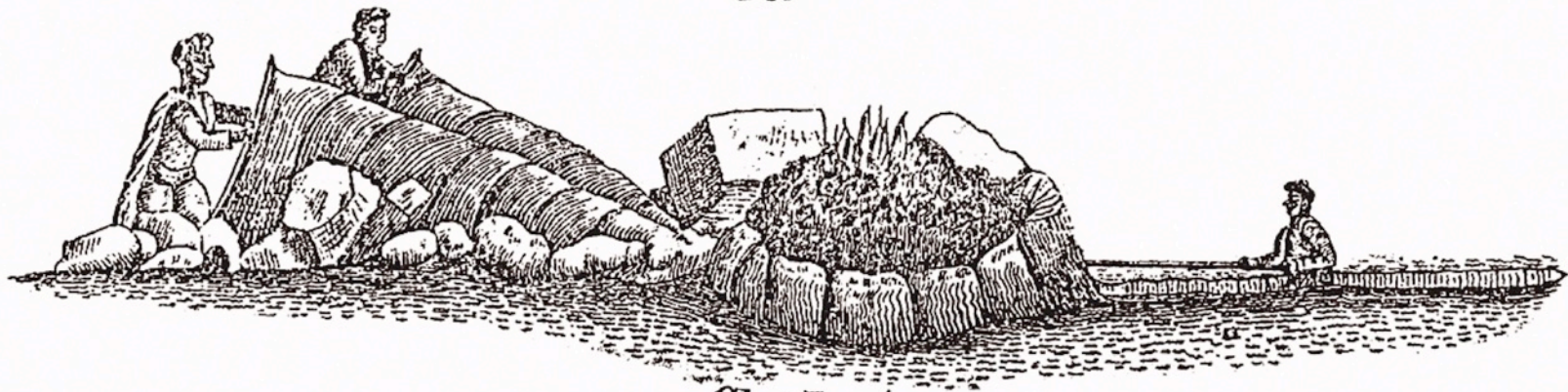
*Photo:
Peter Nyblom*





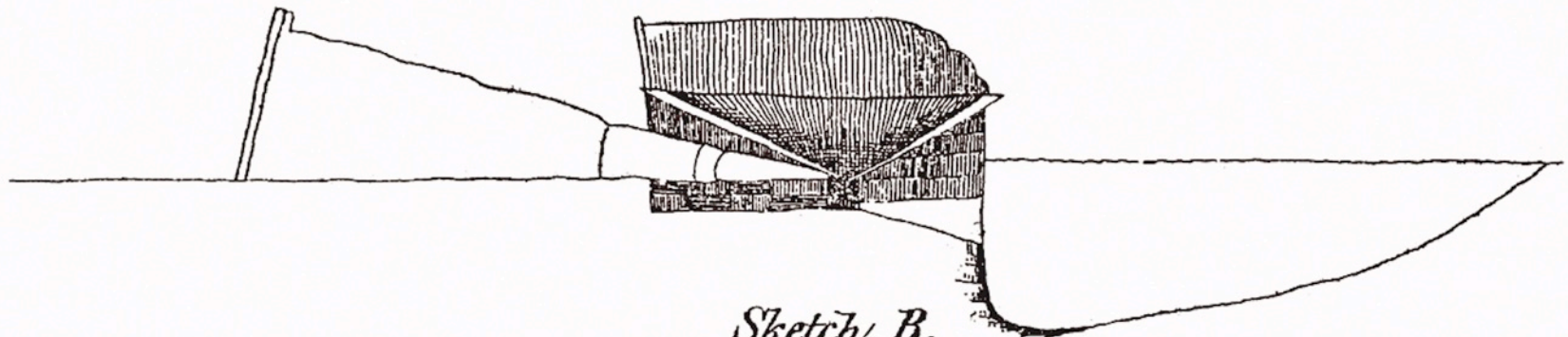
Agaria iron smelters. Ball, *A Manual of the Geology of India* (Calcutta/London 1881).

KUMAON FURNACE, FOR SMELTING IRON ORE.



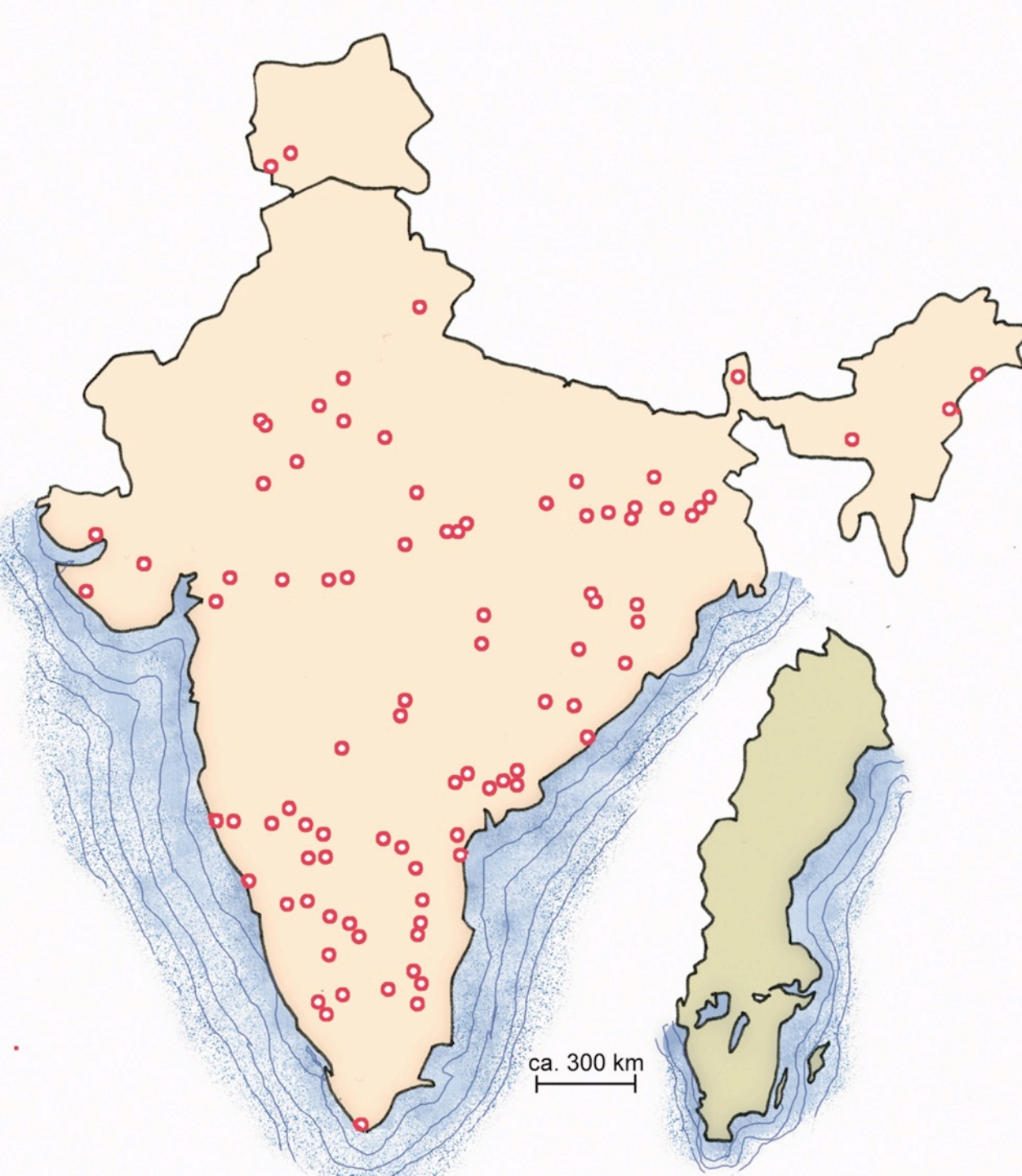
Sketch A.

Vertical Section, from the front



Sketch B.

Kumaoni furnace for smelting iron ore. J. O'B. Becket, *Iron and Copper Mines in the Kumaon Division* (1850).



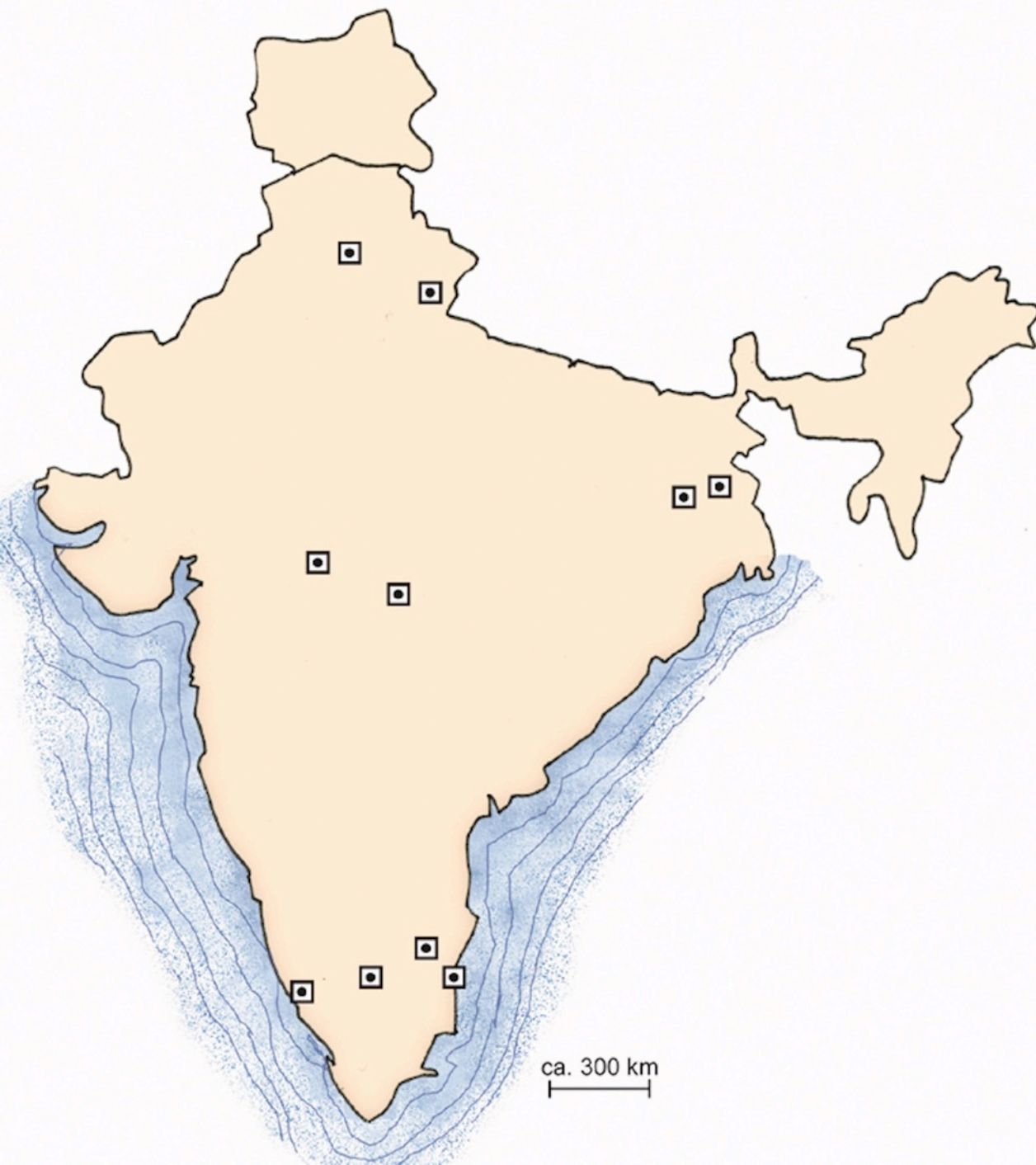
Sites of traditional iron making observed before the year 1900 according to references in Thomas H. D. Touche, *Bibliography on metals of economic value in India* (1918).



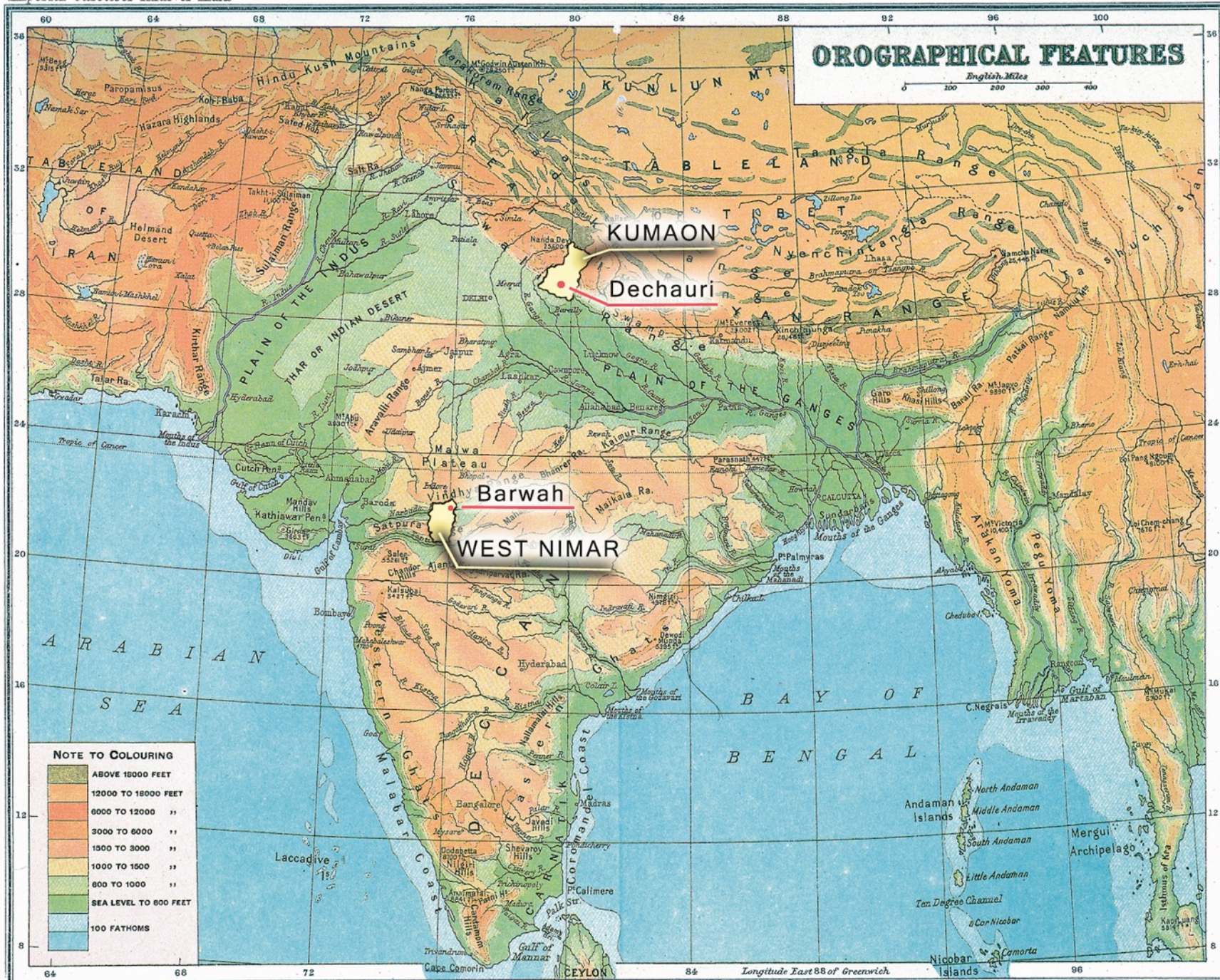
वीथि संकुल VEETHI S

ETHIOPIAN





Blast furnaces in nineteenth century India. Attempts to build modern ironworks based on European technology were very few in India. Most if not all were short-lived.



The Kumaon Iron Works

Memorandum of Agreement

made the *fourteenth* day of October One thousand eight hundred and sixty one Between Henry Drummond a Colonel in the Bengal Army and Frederick Read Esquire Trustees of the Kumaon Iron Works in the North Western Provinces of Bengal in the East Indies by Richard



On 14 October 1861 Julius Ramsay and Colonel Richard Strachey met at the East India United Service Club on St. James' Square in London. They signed a formal contract. Ramsay was to "perform all duties consistent with and incidental to his employment as Manager of the Works of the Trustees in Kumaon or elsewhere in the Upper Provinces of Bengal." Ramsay's papers, National Museum of Science and Technology, Stockholm, Sweden.





Ramgarh

Dechauri

Khurpa Tal

Kaladhungi

0 5 10 15 km



William Sowerby's blast furnace. Photo: Gustaf Wittenström, National Museum of Science and Technology, Stockholm, Sweden



The Engelsberg Iron Works, Sweden. A World Heritage site.







Pramod Kumar Tripathi, present farmer-owner of the ironworks area in Dechauri.

North of India Kumaon Iron Works Company, Limited.

Paid-up Capital Rs. 4,65,000 in 465 Shares of Rs. 1,000 each.

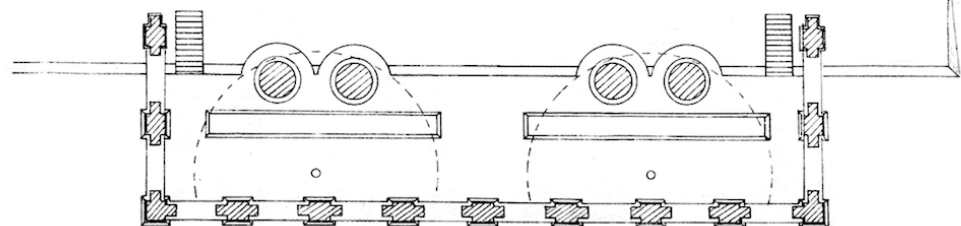
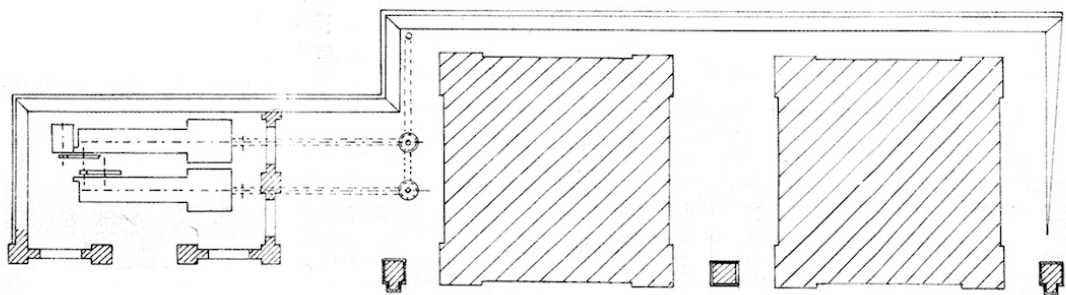
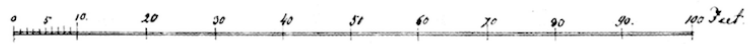
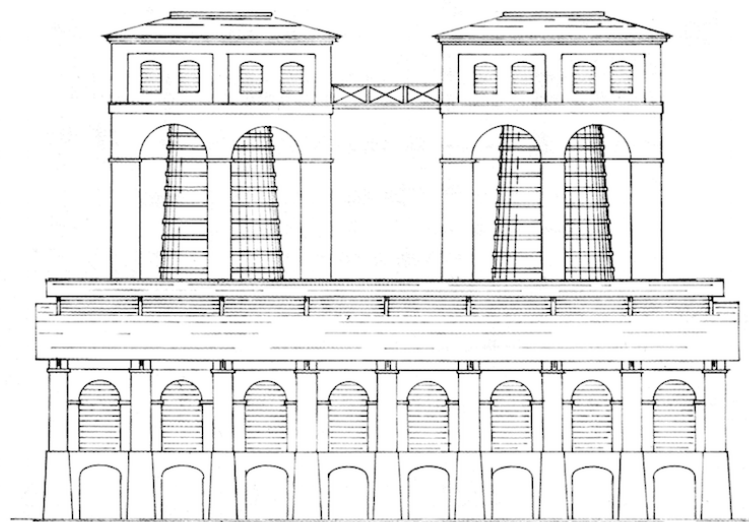
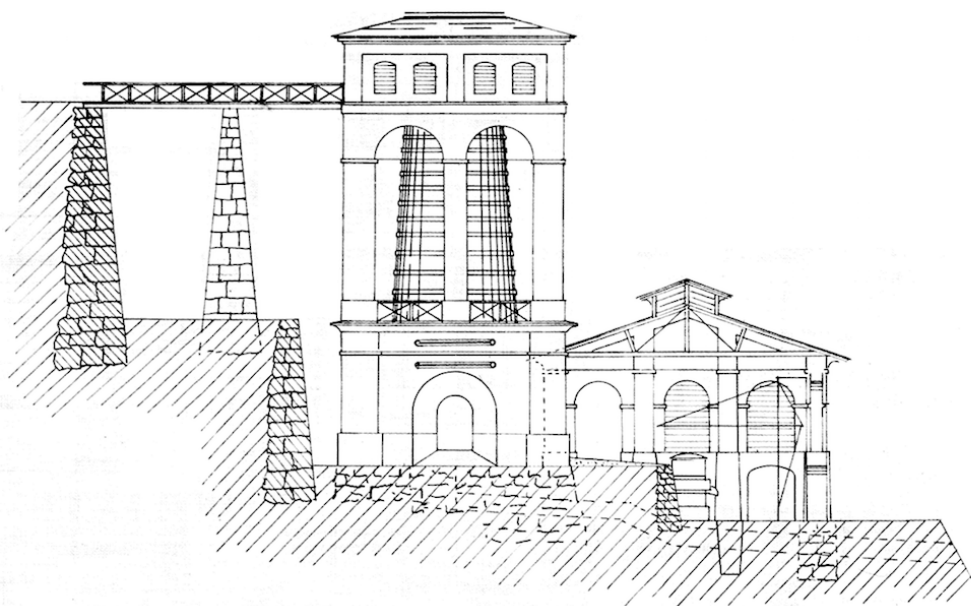
Manager,	...	J. W. RAMSAY, ESQ.
Asst. Manager & Accountant,	...	J. OLDFIELD, ESQ.
Engineer,	...	C. WITTENSTROM, ESQ.
Solicitors,	...	MESSRS. MOLLOY & DALLAS, <i>Calcutta.</i>
Bankers,	...	AGRA AND U. S. BANK, <i>Calcutta.</i>

The direction conducted by a Committee of Shareholders.

PRESENT LIST OF SHAREHOLDERS.

General J. Ramsay.	H. B. Riddell, Esq.
General H. Drummond.	Saadut Ali.
Dr. F. Pearson.	Nawab Daim Khan.
Dr. G. E. Morton.	J. Strachey, Esq., C. S.
C. Wingfield, Esq., C. S.	Dr. F. Douglas.
M. R. Gubbins, Esq., C. S.	J. Campbell Brown, Esq.
A. Ross, Esq., C. S.	Lieut. Col. D. C. Vanrenen.
A. Shakespear, Esq., C. S.	Luchmee Narain.
J. O. B. Beckett, Esq.	Raja Sheoraj Shingh.
Kumaon Mission.	Col. Clarke, C. B.
F. Read, Esq.	Major Thurburn.
Captain Baron F. Von And- lau (estate of)	Major Fitzgerald.
Captain Gray.	Captain Nisbett.
Motee Lall, of Agra.	Major F. W. Baugh.
Rees Davies, Esq.	Captain Smyth.
Motee Ram Sah.	E. G. Fraser, Esq.
Bajinauth & Gunga Pershaud.	Lieut. Col. H. D. Taylor.
P. Carnegie, Esq.	Captain Harrison.
	Captain Mylne.

*Advertisement for
additional capital in
the summer of 1862.
Ramsay's papers,
National Museum of
Science and
Technology,
Stockholm, Sweden.*



KUMAON IRON WORKS

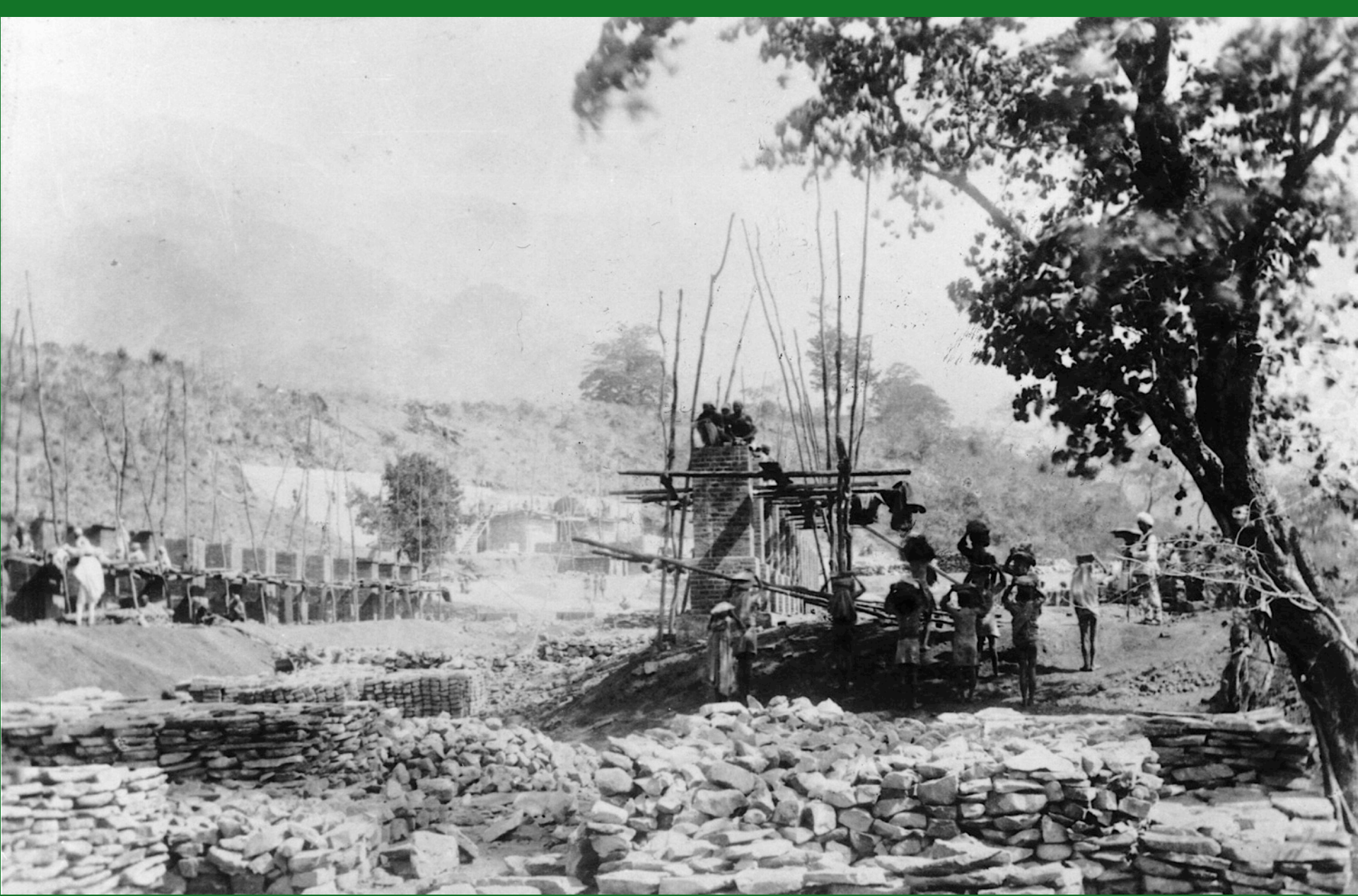
DESIGN FOR 2 BLAST-FURNACES IN

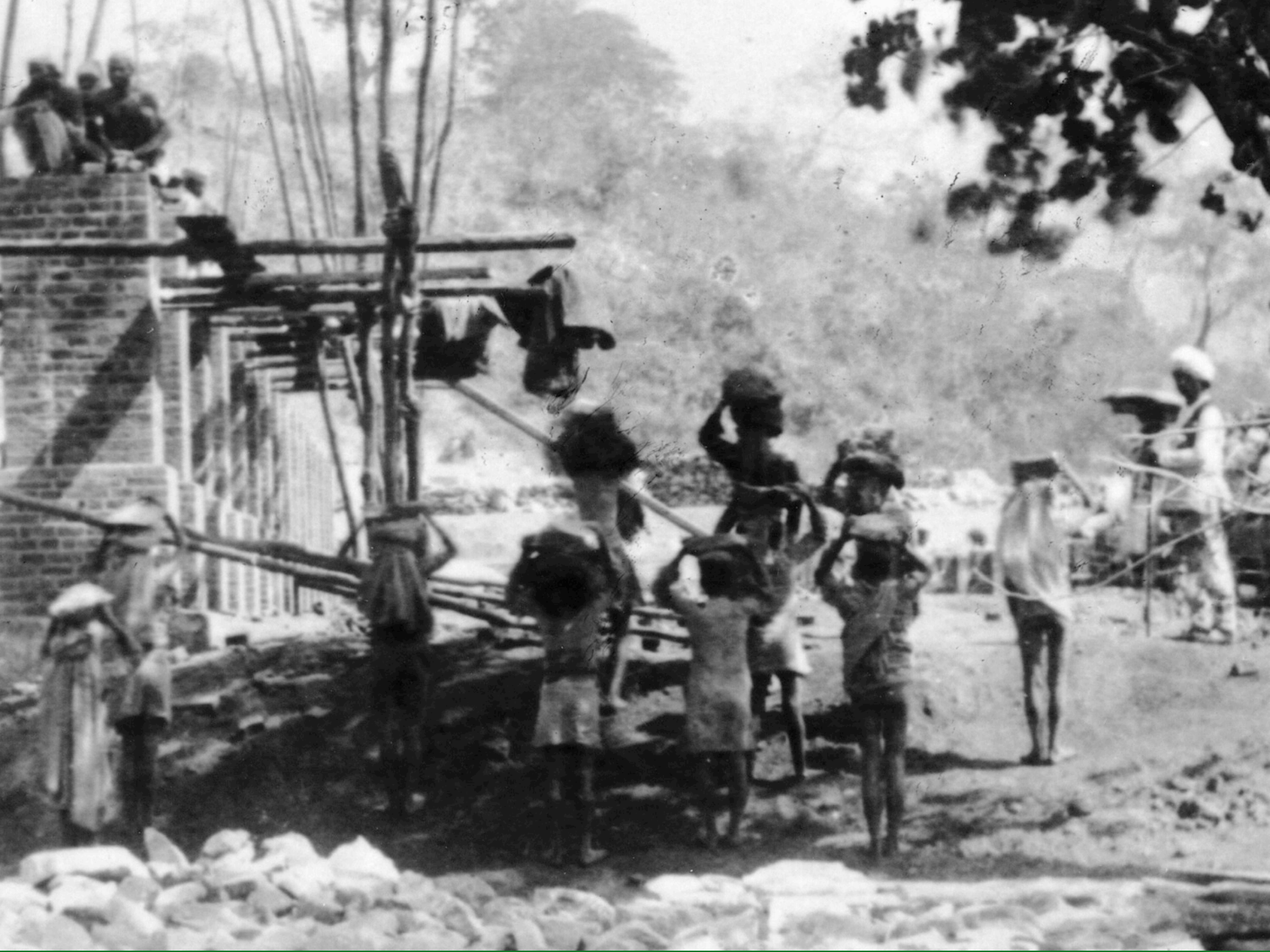
COMBINATION WITH BESSEMER-APARATUS

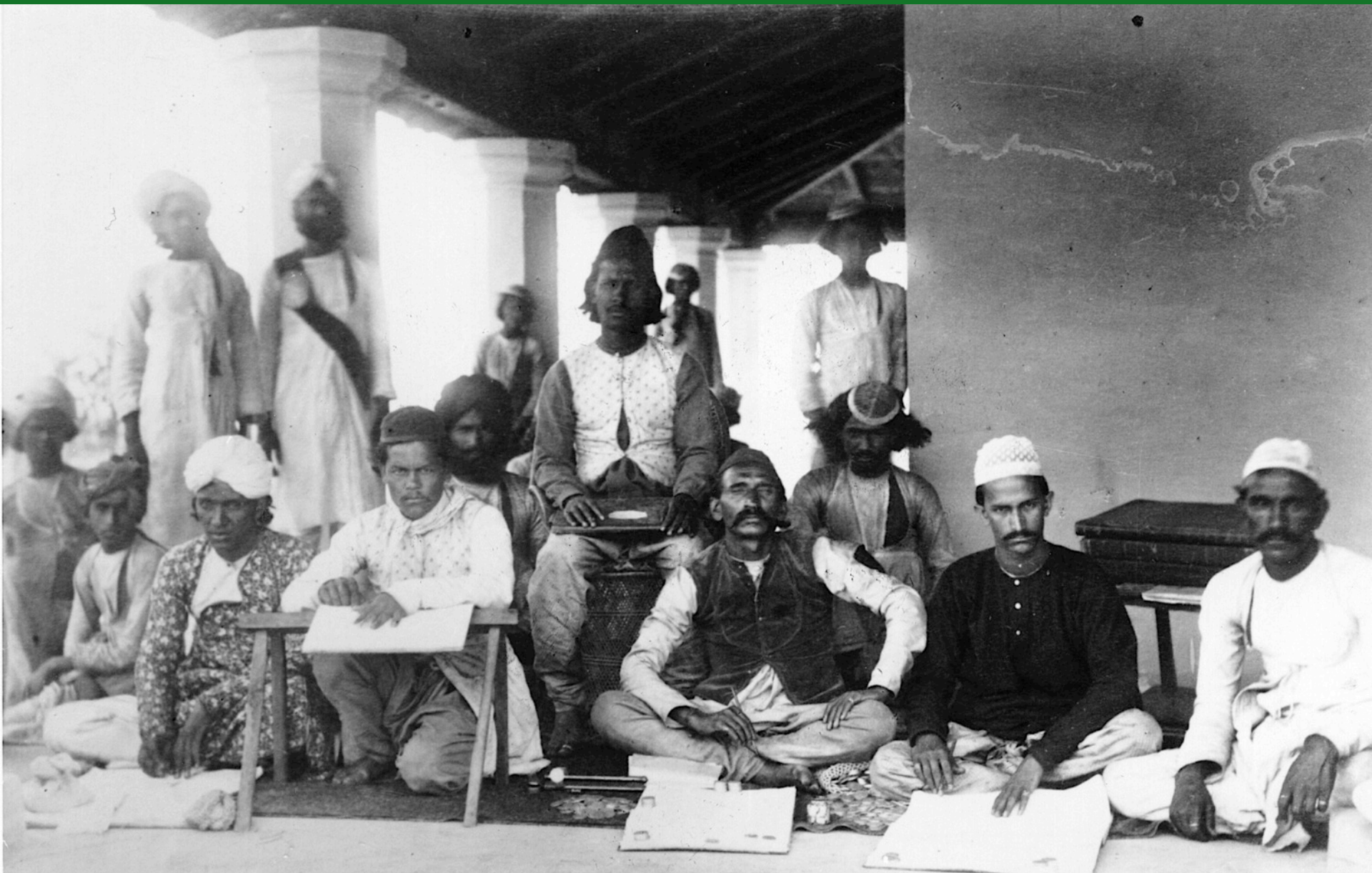
C. Wm

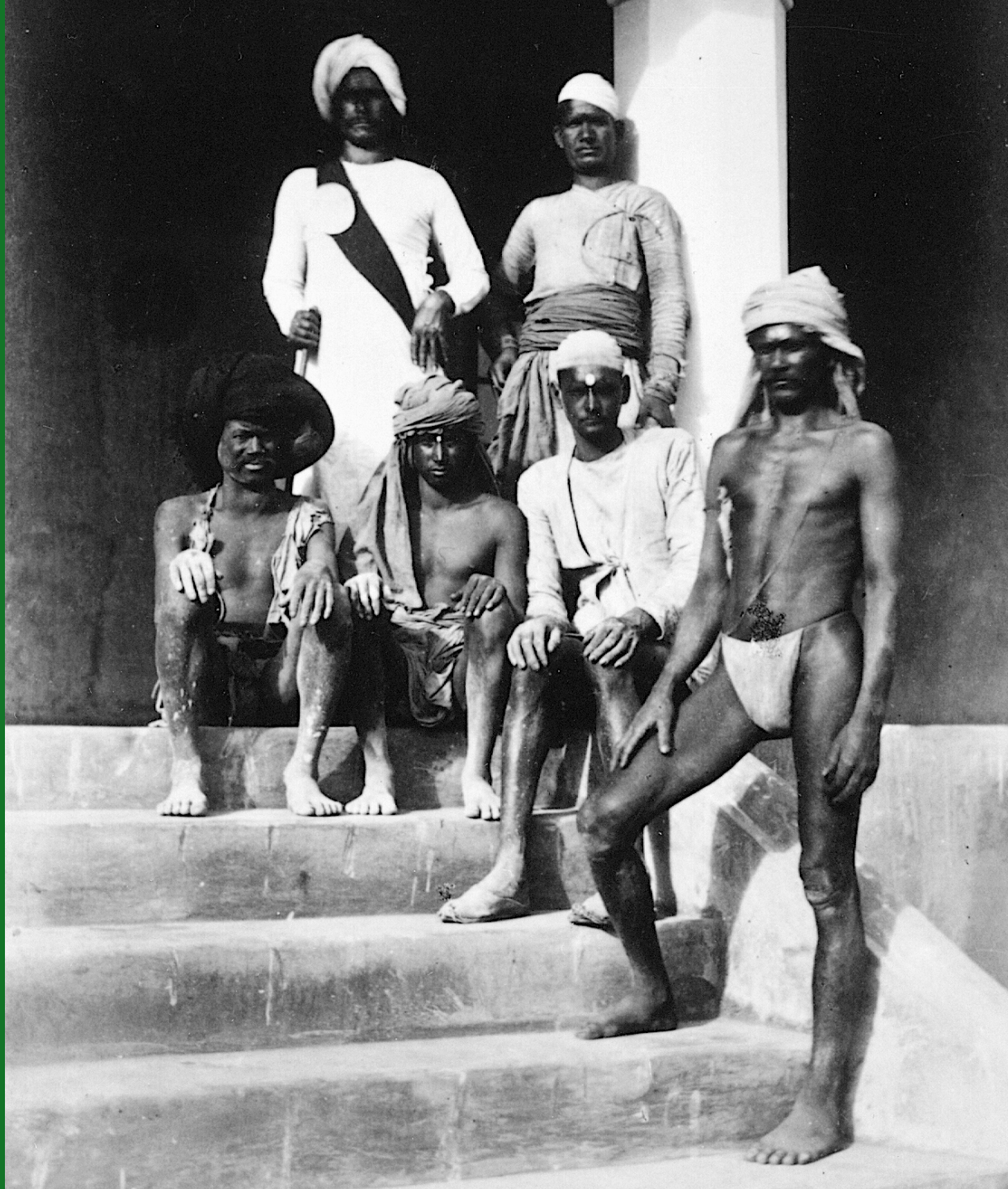


Julius Ramsay wrote “I do not believe I exaggerate, we have 2,000 workers of all kinds.” Photo: Gustaf Wittenström 1863, National Museum of Science and Technology, Stockholm, Sweden













Mr. Russell, Mr. Edwards and Mr. Louis. Photo: Wittenström.
Photo: Gustaf Wittenström, National Museum of Science
and Technology, Stockholm, Sweden

Nimar Iron Works.

INDUSTRIAL.

Nimar Iron Works.

No. 505—2998, dated 11th October 1860.

[No. 1.] From Col. Sir R. C. Shakespear, Kt., and c. z., Agent Govr. Genl. for Central India, to Offg. Secy. to Govt. of India, P. W. Dept.

I HAVE the honour to inform you that a copy of the Secretary of State's letter No. 103 of 2nd August 1860, having been forwarded by me to Major Keatinge, I have received from that Officer a letter No. 458 of date 8th instant, of which a copy is enclosed.

2. This letter is entirely regarding the new Iron Works which are about to be established in the Province of Nimar.

3. In the letter now forwarded Major Keatinge submits *four* separate propositions, regarding each of them it would appear necessary to take the orders of Government.

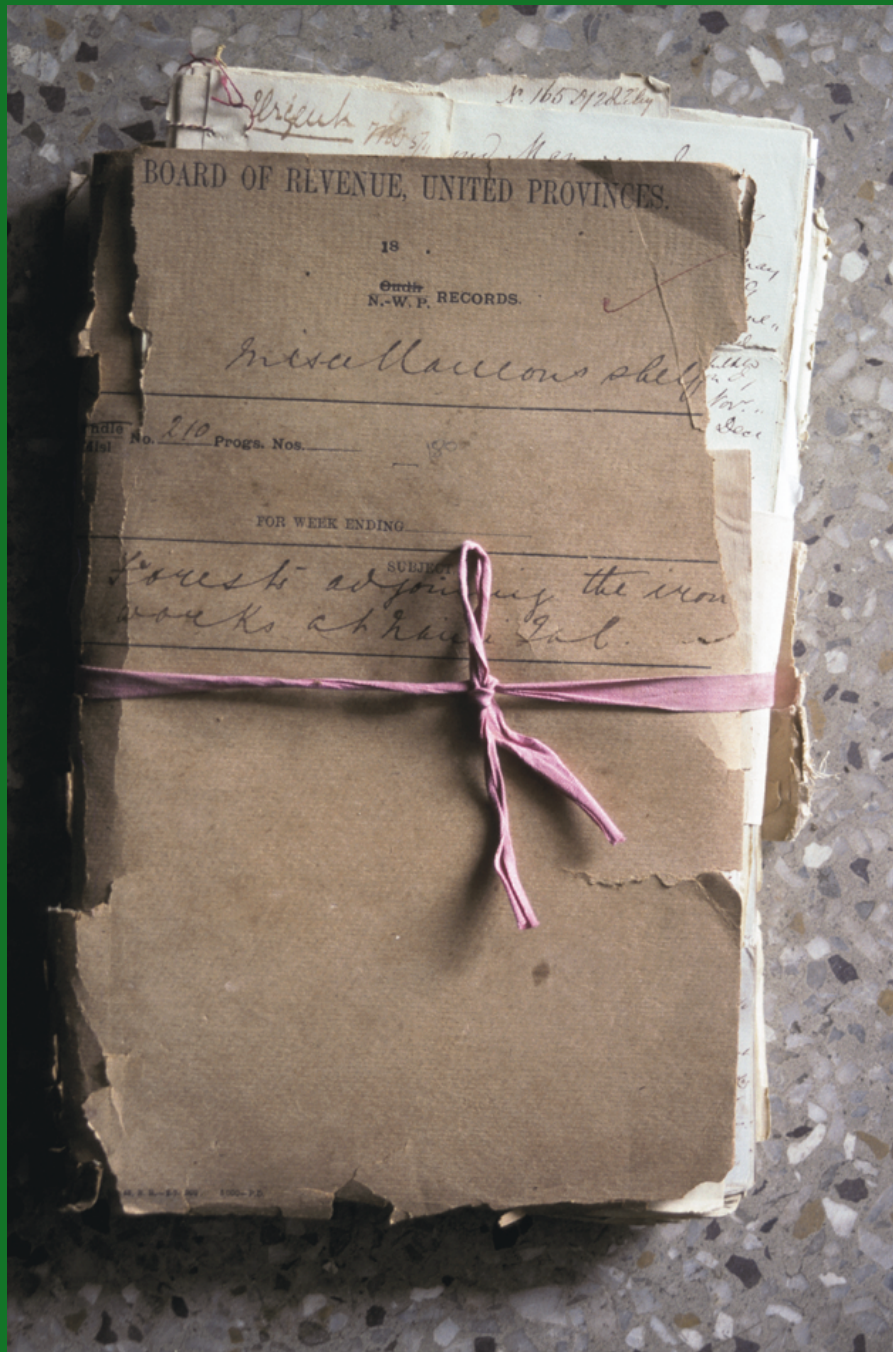
1st. The location of the works. Major Keatinge is of opinion that Burwai on the Nerbudda will be the best site, but he wishes, before actually commencing, to take the opinion of Mr. Mitander after that gentleman's arrival.

2nd. A house for Mr. Mitander and charcoal sheds ; a small Engineers and Smith's shop, and bins for ore.

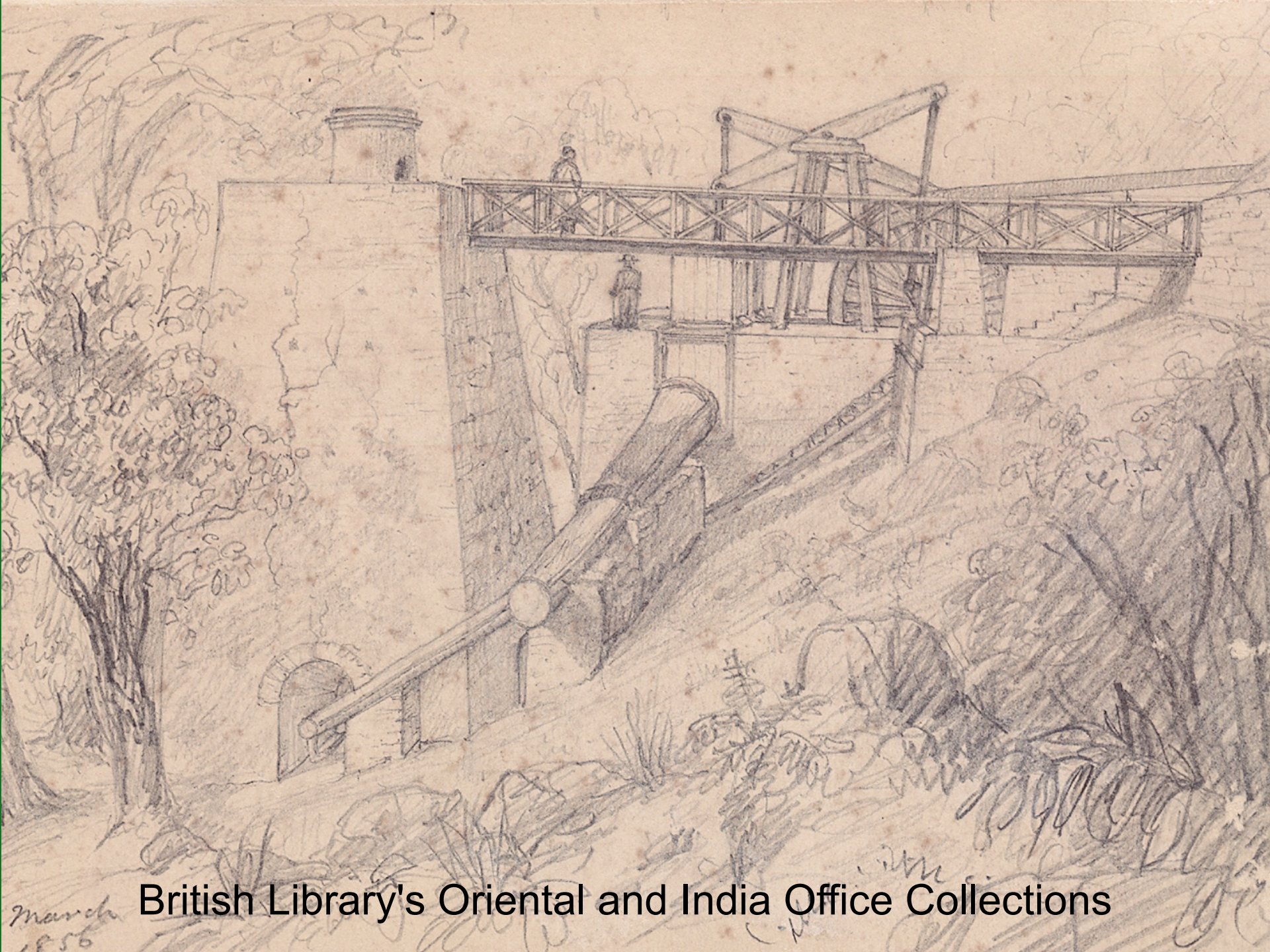
Major Keatinge proposes that the above works should at once be commenced upon at Burwai in the event of Mr. Mitander agreeing with him as to the superiority of that place.

3rd. Major Keatinge solicits orders as to how he is to report progress, and

Printed archival material. Letter of 11 October 1860 on the "Nimar Iron Works" concerning, among other things, the arrival of Mitander. PWD Proceedings, Government of India, National Archives, Delhi OR British Library Oriental and Indian Office Collection, London.



The red tape. Photo: Jan af Geijerstam. State archives Lucknow



British Library's Oriental and India Office Collections

The Burwai Iron Works

1860.

Nov. 26. På morgonen afgik til Mandia. Doctor Mackenzie kom
nede og os afgik til Manduak. Jeg udførte de betingte
til et foretog af malerier som at Majoren gik ned.

27. Tidligt på morgonen kom Majoren mig og afgik
til Manduak. Jeg gik til Mandia og attervandre
sammen med til Fruent. Turen med til til "The
Travellers bungalow" foragde på Harrys langsommelighed
som jeg gjorde tætte færdigt, uden jeg næste ligge i
bungalow første nat. Det var nok lidt trættende
at kunne sig aldeles sammen den dag.

28. Til Mandia tidligt på morgonen, da jeg kom
fandt jeg mit lille hus. I ordning da jeg kom.
de næste i det samme og ordne min stue efter
sagen. Erhva en tidning fandt jeg Majoren.

29. Besøgte Communalen gik og ordne den for
græfning m. m. Skat efter anden som behandles
endest erhva en som midtogs hem og tog til
foragelse. Skat for lidt af min stue. Erhva en
sag om af bøger med diverse fra Majoren.

30. Hemme hele dagen. Skat 2^{de} besøg til Majoren
og to de for Viridipet til Mandia. Harry blev
jag på og de dageløst af Corundia & Communal
for malerier.

Decemb. 1. Tidligt på morgonen afgik til Mandia og på
efter middag til Corundia. Jeg et stort sæt af
og de til. Skat om i stuen stillet.

Nils
Mitander's
diary. The
Kinship
Centre,
Karlstad,
Sweden.

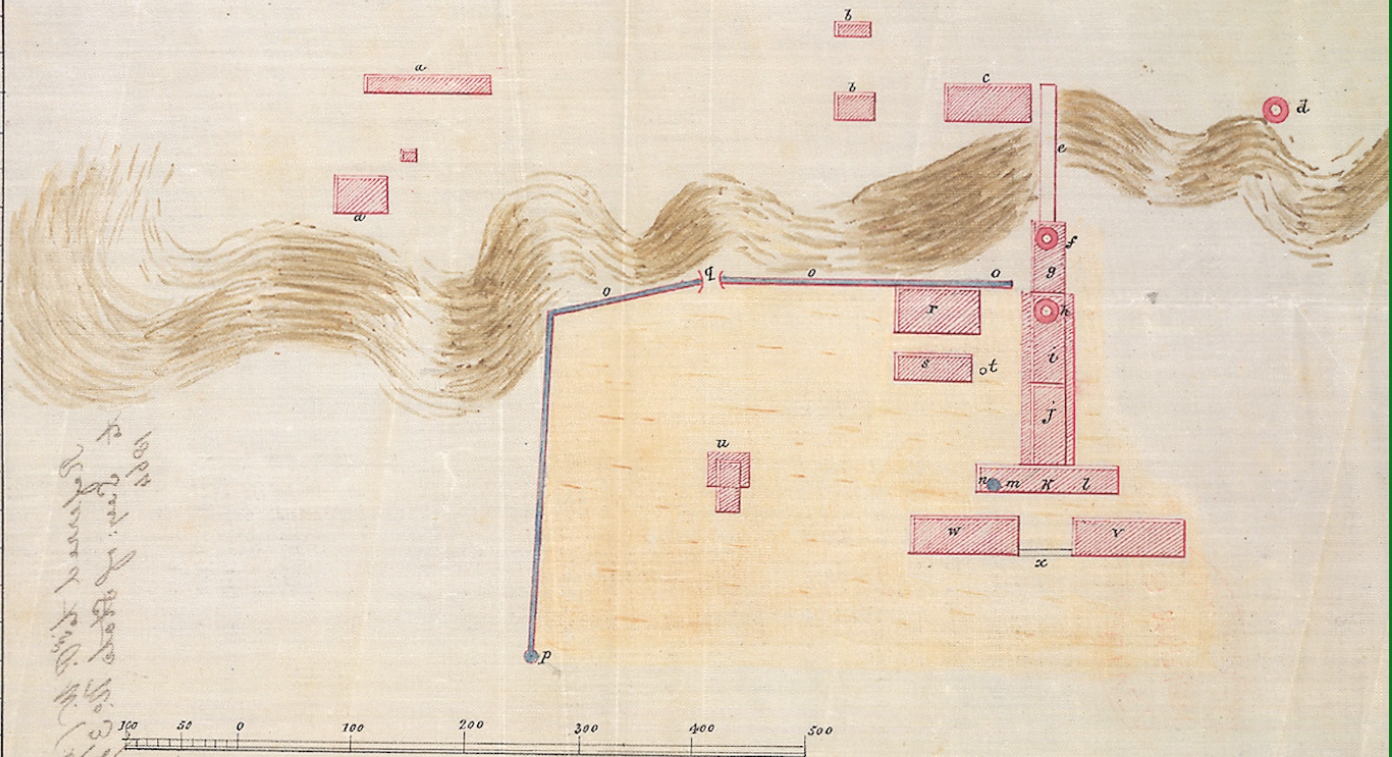


The Burwai Iron Works in 1863. Watercolour by Mr. Knight, clerk in the office of the Political Agent in Nimar. British Library's Oriental and India Office Collections, London



Superintendent's Residence with Outhouses
Engineer's _____ D ^e _____ D ^e
Charcoal House N ^o I
Calcining and Lime Kiln
Bridge to Blast Furnace
Gas Calcining Kiln
Boiler and Blowing Engine House
Blast Furnace
Cast House
Work shed for Carpenter's and Blacksmiths
Fitting Shop
Pattern Shop
Machine Shop
New Well
Aqueduct
Old Well
Bridge Cross Aqueduct
Forges and Steam hammer
Rolling Mill
Water Trough N ^o I
Office and Store Room
Charcoal House N ^o II
_____ D ^e _____ D ^e N ^o III
Bridge between Charcoal Houses

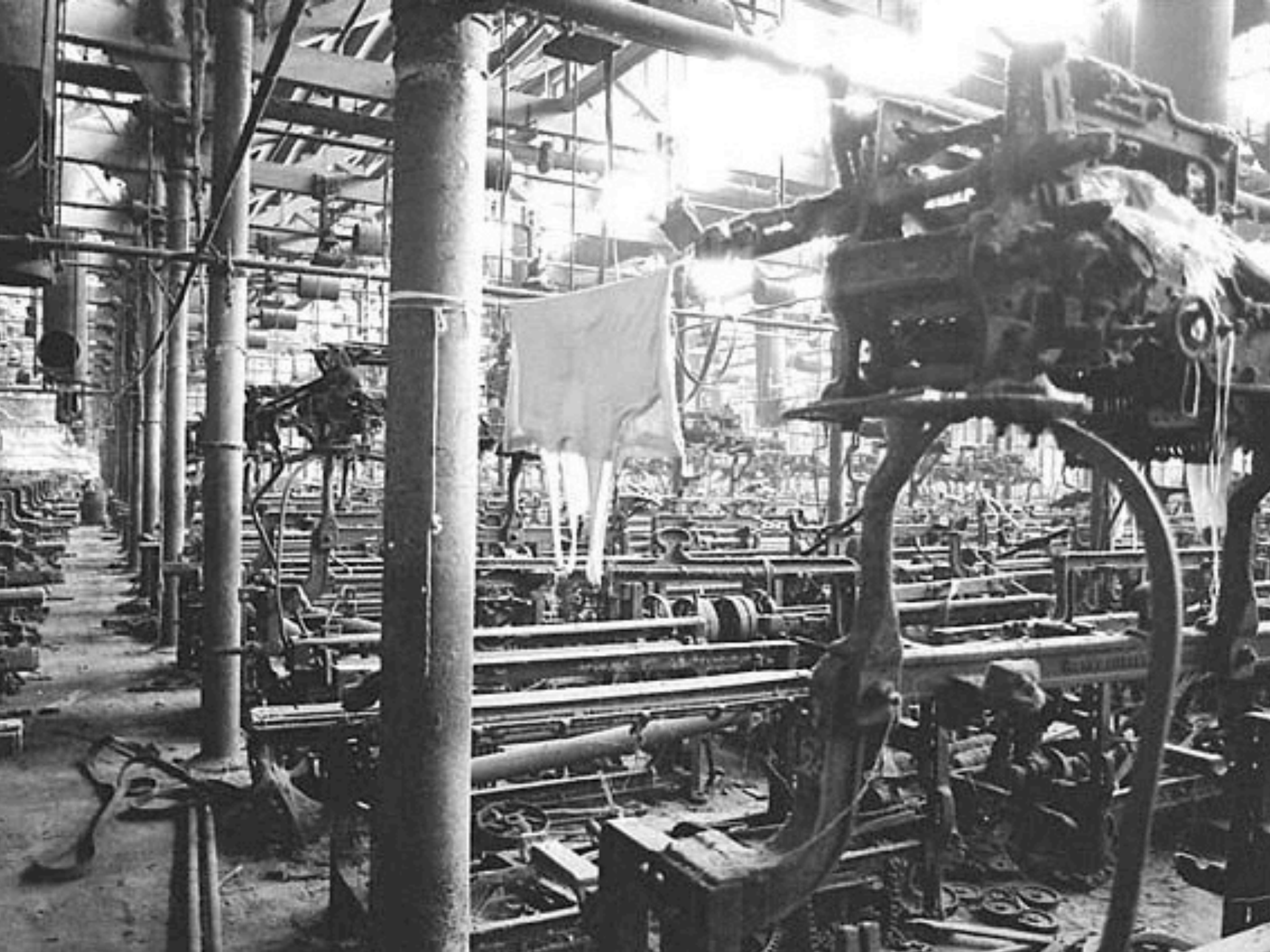
BLOCK PLAN OF BURWAI IRON WORKS



Block plan of of the Burwai Iron Works in 1863, by Captain J. G. Melliss . British Library's Oriental and India Office Collections



The shrine of Baba Chimney in 1997, incorporated in one of the chimneys. This one was probably for the boilers of the blowing machinery.







Jan af Geijerstam,
Stockholm, Sweden
jan@geijerstam.se