P. No. of Reference.

M.R.O. 1—22,406—28-11-30.

MADRAS RECORD OFFICE.

Government of Madras.

DEPARTMENT.

G.O. No.	Press Mis.
Dated	18

Not to be folded or roughly handled

No. 20. Read the following letter from Colonel C. E. FABER, Chief Engineer; to H. FORBES, Esq., Acting Secretary to Government, dated 16th July 1857, No. 2052.

SIR,

In Extract Minutes Consultation No. 1330, dated 2nd August 1856, on the subject of the several description of tools in use with the Public Works Department, I was directed to give information on the following points:

1st. As to the comparative merit of English tools, tools made up in the Arsenals, and tools purchased in the country.
2nd. As to their comparative cost, and
3rd. As to their comparative degree of favor among laborers of the D. P. W.
4th. To furnish patterns of the tools best suited for the purposes of the Department, and
5th. To furnish a Memorandum of the probable numbers of Pickaxes and Mamoties, that may be required for annual consumption in the Department.

2. The order of Government was circulated to the Officers of the Department with Extract from Proceedings No. 5715, dated 13th August 1856, and the following is a summary of the only replies from which very useful information is to be gathered.

3. *Nellore District.*

Letter No. 836, dated 20th August 1856.

I. The only good Mamotie in this District, is the large long bladed one used by the Wudders; the pattern is not a useful one for general purposes, being too heavy for ordinary coolies.

II. Advocates the introduction of the small sized Mamoties, and Pickaxes recently made up for the Sappers and Miners at Mercara, the Natives appreciated these tools, and were always eager bidders at the periodical sales of those which were condemned as unserviceable. That marked Arsenal No. 14, in the Military Board's Statement, and priced at Rupees 1-0-9, appears to be of the pattern alluded to.

4. *Kurnool District.*

Letter No. 230, dated 5th September 1856.

I. Advocates the introduction of Arsenal tools as compared with country made ones, and observes that the coolies can do far more work with them.

II. On Trunk road No. 12. Arsenal tools were used, and all the earth work was done by task without any objection on the part of the coolies, whereas on another work where tools of country make were supplied, the coolies refused to perform the task, remarking at the same time, that if they had proper tools they would do it.

5. *Chingleput District.*

Letter No. 995, dated 18th September 1856.

I. Considers the Europe Mamoties too heavy, but if made of about 7 lbs. in weight, and edged with steel like those in use with the Sappers and Miners, thinks it would be found to be the best kind of tool for all purposes.

6. *Malabar District.*

Letter No. 730, dated 1st October 1856.

I. Of all the Mamoties specified in the Military Board's list, that made up by Colonel Ottley appears the best fitted for use in the repair, and formation of roads.

II. The ordinary description of Mamotie used on Trunk road No. 5, is a Malabar tool called "kykote" manufactured at, and near Paulghaut; it weighs 3 lbs. and is found to answer well in both hard, and soft soil.

III. Mamoties weighing 9 lbs. are very well made at Paulghaut after an English pattern, and cost Rupees 1-12.

gathered

7. *South Arcot District.*

Letter No 187, dated 10th October 1856.

I. The Mamoties weighing 9 lb. received from the Arsenal are very efficient tools, and not objected to by coolies who have got accustomed to them. At the same time if the weight did not exceed 7 lbs. they would be more generally useful.

II. It would be well to have 2 or 3 different patterns both as to size and weight, and the angle of the helve, to suit different soils and situations.

III. The Pickaxes weighing 9 lbs. received from the Arsenals are preferred to those procured in the bazaars.

8. *Tinnevelly District.*

Letter No. 675, dated 6th October 1856.

I. There are six descriptions of Mamoties in use in this District.

	Length of blade.	Breadth of blade.	Price. Rs. A. P.	Weight.
1 Europe.....	1 foot.....	9′ 7″	1 12 11	.....10 lbs.
2 Do.	10 feet.....	9 7	„ 12 0	..... 5 „
3 Country.....	13 „	9½ 7	2 7 1	.....10 „
4 Do.	10 „	9 7	1 6 11	..... 5 „
5 Do.	8 „	7 6	„ 7 0	..... 3 „ 1 oz.
6 Do.	8 „	8 0	„ 8 0	..... 3 „ 1 „

Of the above Nos. 1 and 3 are considered too heavy, and unwieldy, for general purposes.

II. No. 2 which is only 5 lbs. in weight appears to be a handy tool, although its shape is somewhat defective. It would probably last 2 or 3 times as long as the Mamotie in common use.

III. Nos. 4 and 5 are altogether inferior articles.

IV. No. 6 is in general use in the Northern parts of Tinnevelly, and is a small but useful description of Mamotie. It is manufactured at Rajahpolliam in the Streevellypoothoor Talook, a locality celebrated for the superior quality of its iron ware productions. This instrument is far more durable than the common Tinnevelly Mamoties, and lasts on an average about 6 months.

V. The best Pickaxes are the Europe weighing 10 lbs. which last as long again as those of country manufacture.

VI. The 5 lbs. pick is too slight for general purposes, soon wears down, and not unfrequently snaps off near the eye.

9. *Superintending Engineer, Presidency Division.*

Letter No. 857, dated 23rd October 1856.

I. States that the Lascars of his Department prefer the Pickaxes and Mamoties from the Vellore Arsenal, sent by the Military Board, as being light, and well adapted from their shape, for their particular work. The rest of the people employed in his Department are chiefly Wudders, who always use their own Mamoties, and prefer them to any other kind.

10. *Madura District.*

Letter No. 318, dated 30th October 1856.

I. The Mamoties in use in this District are :

1st. The English Mamotie procured from the Arsenal at Trichinopoly, weighing about 10 lbs. Size 1 foot long 9′ 7″ broad, price Rupees 1-12-11.

2nd. A Mamotie manufactured at Madura of nearly the same pattern as the former, but weighing only 5lbs. and costing about Rupee 1.

3rd. The common village Mamotie varying in weight from 5 to 3lbs. and costing from 10 to 6 Annas.

II. The 1st is condemned as useless from its extreme weight.

III. The Mamotie recommended is one made after the Arsenal pattern of about 10″ long, 8′ 6½″ broad, and weighing about 5lbs.

IV. The Arsenal Crow Bar is very superior to the country one, and is used in preference by the stone Wudders.

V. The Europe Pickaxe supplied from the Arsenal is also preferred by the stone Wudders, but the handles are not sufficiently strong, the 5lbs. Pickaxe is too slight.

VI. The small hand axes issued from the Arsenal are very good, but the coolies prefer their own axe of about 1 foot in length, of an uniform breadth of 2½″, and thickness at the eye of 1″, which gradually diminishes to the edge.

VII. The Hammers supplied from the Arsenal for breaking small stones, are very good.

VIII. The common Native bricklayer's Trowel is approved of.

11. *Salem District*

Letter No. 446, dated 5th December 1856.

I. States that the superiority of English "wrought iron" tools over all others ("Arsenal" or "country" made) appears to be generally allowed, but large numbers of English made "cast iron" tools are inferior to the worst descriptions of country made articles, and are more expensive.

II. Has had no experience in Arsenal made tools, but gives sketches of some of those made in the country.

A is the Mamotie in common use, weighs 6lbs. and costs 14 annas. A better description of this Mamotie is made at Ahtoor, weighs 6½lbs. and costs 1 Rupee.

B is an improved pattern made by Mr. Causaber in the Railway workshop at Salem, and is preferred by the Wudders, though the common coolies object to its great weight, 10lbs.

III. The peculiarity of Mr. Causaber's Mamotie is that it has a swell down the centre, which increases its strength, and capacity for holding earth.

IV. The common country Pickaxe (a) made at Ahtoor, weighs 9½lbs. and costs Rupees 1-6-0.

V. An improved and much more serviceable pattern (b) has been made in the Railway workshop (weight 10½lbs.) this Pickaxe is tipped with steel at both ends but its cost is not given.

VI. The best Ahtoor Pickaxes, steel tipped, weigh about 10lbs. and cost Rupees 2-12.

VII. The common country made Crow Bar is 3′ 6″ long, weighs 14lbs. and costs Rupees 1-6 but is a very inferior tool. The best Ahtoor made is 4′ 6″ long, and costs Rupees 4.

VIII. A much better Crow Bar is used on the Railway made of English bar iron 1½″ diameter, 3′ 7″ long, and weighing 21lbs.

IX. The common country made Bill Hook is good enough for general use, and is preferred by the coolies to any of the English make.

X. The country made Hatchet (a) in common use, is a very inferior article an improved pattern (b), far more servicable, and very little heavier, has been made for the Railway coolies who however prefer their own.

XI. A sketch is given of an American Hatchet which is shorter, and broader in the blade than the English.

XII. English made tools, and those made of the English patterns, are generally objected to on account of their great weight. Some English Pickaxes were tried in the District, and it was found that the coolies could do little more than lift and drop them again. The Convicts in the Salem Jail, who are not allowed a choice, have used the English tools with great success.

12. *Ganjam District.*

Letter No. 36, dated 9th January 1857.

I. States that there can be no doubt of the superiority of tools manufactured in Europe, as well as their durability over those manufactured in the country, whether in Arsenals, or villages.

II. At the Dowlaishweram workshops, tools of superior workmanship, cheaper, and as durable as those supplied from Arsenals are turned out.

III. Village manufacture although not equal in description of work to either Europe or Arsenal, is preferred by the Natives, who will not use the Arsenal tools.

IV. When made to order village tools are by no means inferior in regard either to workmanship or strength, and are very much cheaper than Arsenal tools.

13. From the information given, which it must be observed is in most instances very incomplete, and from my own experience, and that of my associates in the Central Office, I have arrived at the following conclusions.

I. That the superiority of workmanship is in favor, 1st of English made, and 2nd of Arsenal made tools. The tools manufactured in the country, unless made to order, being of a very inferior description.

II. That in consequence of the cheapness of labor, tools may be made up more economically in this country than in England, the only thing wanting to ensure their being serviceable, being good patterns of workmanship; with the view of securing that advantage, I took the opportunity of entering in my last annual Indent on the Court of Directors, a certain number of tools of each description for distribution in the District.

III. That the natives from their known prejudice in favor of their own customs generally, give preference to their own tools, the principal objection to those manufactured in England, and in the Arsenals in this country, being that of their greater weight.

The articles marked are not recommended.

14. The accompanying drawings (with specifications) of the tools best suited for the purposes of the Department are forwarded for consideration, and should they meet with approval, pattern tools might be made up from them in the Arsenal.

15. The Statement marked B, exhibits the probable numbers of Pickaxes and Mamoties likely to be required for annual consumption in the Department.

No. 21. ORDER THEREON, No. 1677; dated 4th September 1857.

The above letter from the Chief Engineer furnishes an abstract of the replies obtained by him from different Engineer Officers, regarding the comparative cost of, and preference given by Native workmen to, the different tools in use among them, whether manufactured in Europe, in the Arsenals of this country, or by private native artizans; the information having been called for in an Extract from the Minutes of Consultation in the Military Department, dated the 10th June 1856 No. 1408. From the various statements made by these Officers, it would appear that although superiority of workmanship is shown in the English implements, it is on the whole preferable to make the tools in the Arsenals of this country, both on the score of economy, and in order that the peculiar shape and fashion to which each division of the country is accustomed and prefers, may be attended to.

2. The Chief Engineer's letter and enclosures will be communicated to the Military Department, with reference to the Extract Minutes Consultation in that Department quoted above.

(Signed) H. FORBES,
Acting Secretary to Government.

Central Office of P. Works
Fort Saint George,
16th July 1857

No. 2052

From,
The Chief Engineer.

To,
The Secretary to Government P. W. D.

Public

Tools

Sir,

In Ex. Print Cons. No 1330, dated 2nd August 1856, on the subject of the several descriptions of tools in use with the Public Works Department, I was directed to give information on the following points.

1st. As to the comparative merit of English tools - tools made up in the Arsenals - and tools purchased in the Country.

2d. As to their comparative cost.

3d. As to their comparative degree of favor among laborers of the D. P. W.

4th. To furnish patterns of the tools best suited for the purposes of the Department.

5th. To furnish a memorandum of the probable numbers of pickaxes and mamoties that may be required for annual consumption in the Department.

2 The order of Government was circulated to the Officers of the Department with Ex. from Proceedings No 5715. dated 13th August 1856, and the following is a summary of the only replies from which very useful information is to be gathered

3 Nellore District.

I The only good Mamotie in this District is the large long-bladed one used by the Cuddaps; the pattern is not a useful one for general purposes, being too heavy for ordinary soils.

II Advocates the introduction of the small sized Mamoties & Pickaxes recently made up for the Sappers and Miners. At Seringapatam the Natives appreciated these tools and were always eager bidders at the periodical sales of those which were condemned as unserviceable. The Bal Markid Arsenal Mr in the Military Board's Statement and priced at Rupees 1—0—9, appears to be of the pattern alluded to.

4 Kurnool District.

I Advocates the introduction of Arcaut tools as compared with Country made ones, and observes that the latter can be had more work with them.

II On Trunk Road No 12. Arsenal tools were used and the earth work was done by task without any objection on the part of the Coolies, whereas on another work where tools of Country make were supplied, the Coolies refused to perform the task, remarking at the same time, that if they had proper tools they would do it.

5 Chingleput District.

I Considered the Europe Mamoties too heavy, but if made of about 7 lbs in weight, and edged with steel like those in use with the Sappers & Miners, thinks it would be found to be the best kind of tool for all purposes.

6

Mr. Key's dated 1st Octr 56.

6 Malabar District.

I Of all the Mamoties specified in the Military Board's List, that made up by Colonel Otley appears the best fitted for use, in the repair and formation of Roads.

II The ordinary description of Mamotie used on Trunk Road No 5. is a Malabar tool called "Ry kote" manufactured at and near Paulghaut, it weighs 3 lbs, and is found to answer well in both hard and soft soil.

III Mamoties weighing 3 lbs are very well made at Paulghaut after an English pattern, and cost Rupees 1—12—0

Letter No 93 dated 5th October 56.

7 South Arcot District.

I The Mamoties weighing 3 lbs received from the Arsenal are very efficient tools, and not objected to by Coolies, who have got accustomed to them. If the same size of the weight did not exceed 3 lbs they would be more generally useful.

II It would be well to have 2 or 3 different patterns both as to size and weight and the angle of the helve, to suit different soils and situations.

III The Pickaxes weighing 3 lbs received from the Arsenals are preferable to those procured in the Bazaar.

Letter No 95 dated 15th October 56.

8 Tinnevelly District.

I There are six descriptions of Mamoties in use in this District.

		Length of blade	Breadth of blade	Price	Weight
1	Europe	1 Foot	9" 7"	1—12—11	10 lbs
2	Do	13"	9 7	12 —	5 "
3	Country	13	9½ 7	2—7—1	10 —
4	Do	10	9 7	1—6—11	5 —
5	Do	8	7 6	7 —	3 — 1 oz
6	Do	8	8	8 —	3 — 1

Of the above Nos 1 & 3 are considered too heavy & unwieldy for general purposes.

II - No. 2 - which is only 5 lbs in weight appears to be a handy tool although its shape is somewhat defective. It would probably last 2 or 3 times as long as the Mamotie in common use.

III Nos. 4 & 5 are altogether inferior articles.

IV No. 6 is in general use in the Northern parts of Tinnevelly and is a small but useful description of Mamotie. It is manufactured at Rajakpalliam in the Tinnevelly pattern Talook, a locality celebrated for the superior quality of its iron ware productions. This instrument is far more durable than the common Tinnevelly mamotie and lasts on an average about 6 months.

V The best pickaxes are the Europe weighing 10 lbs which last as long again as those of Country manufacture.

VI The 5 lbs pick is too slight for general purposes as soon as blown, and not unfrequently flaps off near the eye.

9 Superintending Engineer. Ex. Dr.

I States that the Lascars of his Department prefer the pickaxes and Mamotties from the Vellore Arsenal sent by the Tinnevelly Road as being light, and well adapted from their shape, for their particular work. The rest of the people employed in his Department are chiefly Wudders, who always use their own Mamotie, and prefer them to any other kind.

10 Madura District.

I The Mamoties in use in this District are:

1st The English Mamotie procured from the Arsenal at Trichinopoly, weighing about 10 lbs — like 1 foot long 9" 7" broad, price Rs. 1-12-11.

2nd A Mamotie manufactured at Madura of nearly the same pattern as the former, but weighing only 5 lbs, and costing about Rs. 1.

3rd The common village Mamoties varying in weight from 2 to 3 lbs, and costing from 10 to 12 Annas.

II The 1st is condemned as useless from its extreme weight.

III The Mamotie recommended is one made after the Arsenal pattern of about 12" long, 8" 6½" broad, and weighing about 5 lbs.

IV The Arsenal crow bar is very superior to the Country one, and is used in preference by the Stone Wudders.

V The Europe pickaxe supplied from the Arsenal is also preferred by the Stone Wudders, but the handles are not sufficiently strong, the 5 lbs Pickaxe is too light.

VI The small hand axes issued from the Arsenal are very good, but the Coolies prefer their own axes of about 9" in length of an uniform breadth of 2½", and thickness at the eye of 1", which gradually diminishes to the edge.

VII The hammers supplied from the Arsenal for breaking small stones, are very good.

VIII The common Native bricklayers trowels is approved of.

11 Salem District.

I States that the superiority of English "wrought iron" tools over all others ("Arsenal" or "Country" made) appears to be generally allowed, but large numbers of English made "Cast iron"

"Cast iron" tools are inferior to the worst descriptions of Country made Articles, and are more expensive.—

II Has had no experience in Arsenal made tools, but gives Sketches of some of those made in the Country.

a is the Mamotie in common use, weighs 6 lbs and costs 1½ Annas - A better description of the Mamotie is made at Ahtoor, weighs 6 lbs and costs 1 Rupee.

b is an improved pattern made by Lt. Lasater in the Railway workshop at Salem, and is preferred by the Coolies, tho the Common Coolies object to its great weight, 10 lbs.

III The peculiarity of Lt. Lasaters Mamotie is that it has a dwell down the centre, which increases its strength, and capacity for holding earth.

IV The common Country Pickaxe (a) made at Ahtoor, weighs 9½ lbs and costs Rupees 1—6—

V An improved, and much more serviceable pattern (b) has been made in the Railway workshop (weight 10 lbs) this Pickaxe is tipped with steel at both ends but its cost is not given.—

10 VI The best Ahtoor Pickaxes, steel tipped, weigh about 10 lbs and cost Rs. 2—12—

VII The common Country made Crow bar is 3' 6" long, weighs 14 lbs and costs Rupees 1—6— but is a very inferior tool - The best Ahtoor made is 4' 6" long and costs Rs 6—

VIII A much better crow bar is used on the Railway, made of English bar iron ½" diameter, 3' 7" long and weighing 21 lbs

IX The common Country made Bill hook is good enough for general use, and is preferred by the Coolies to any of the English make.

X The Country made hatchet (a) in common use, is a very inferior Article, an improved pattern (b) far more serviceable and very little heavier, has been made for the Railway Coolies who however prefer their own.—

XI A Sketch is given of an American hatchet which is shorter, and lighter in the blade than the European.

XII English made tools, and those made of the English patterns, are generally objected to on account of their great weight. Some English Pickaxes were tried in the District, and it was found that the Coolies could do little more than lift and drop them again. The Convicts in the Salem Jail, who are not allowed a choice, have used the English tools with great success.

Ther No 36 dtd 19th Jan 1857 12

Ganjam District.

I States that there can be no doubt of the superiority of tools manufactured in Europe, as well as their durability over those manufactured in the Country, whether in Arsenals, or Villages.—

II At the Dockyard workshops tools of superior workmanship, cheaper, and as durable as those supplied from Arsenals are turned out.—

III Village manufacture altho' not equal in description of work to either Europe or Arsenal is preferred by the Natives who will not use the Arsenal tools.—

IV When made to order village tools are by no means inferior in regards either to Workmanship or strength, and are very much cheaper than Arsenal tools.—

13 From the information given, which it must be observed is in most instances very incomplete, and from my own experience, and that of my associates in the Central Office, I have arrived at the following conclusions

I That the superiority of workmanship is in favour of English made, and 2nd of Arsenal made tools. The tools manufactured in the Country, except made to order being of a very inferior description.

II That in consequence of the cheapness of labor, tools may be made up more economically in this Country than in England, the only thing wanting to ensure their being serviceable being good patterns of workmanship; with the view of securing that advantage, I took the opportunity of entering in my last annual Indent on the Court of Directors, a certain number of tools of each description for

for distribution in the Districts.

III That the Natives from their known prejudice in favor of their own customs generally, give preference to their own tools. The principal objection to those manufactured in England, and in the Arsenals in this Country, being that of their greater weight.—

The accompanying drawings with Specifications of the tools best suited for the purposes of the Department are forwarded for consideration, and should they meet with approval, pattern tools might be made up from them in the Arsenals.

The articles marked * are not recommended.

To Enclosed Statement marked B, exhibits the probable number of Pickaxes and Crowbars likely to be required for annual consumption in the Department.

I have the honor to be,
Sir,
Your most Obt Servt
W. Slater Colonel
Chief Engineer

Central Office of D. W.
Fort Saint George,
16th July 1857.

To,
The Secretary to Government
Ft St G.

W. Slater Lt C.

* W. Clerk Clerkson

Public Works Dept

No. 1677

Extract from the Minutes of Consultation
Under date the 1st ~~July~~ August 1857.

Read the follow-
-ing letter from the
Chief Engineer.

Here enter 16th July 1857
No. 2052

The above letter
from the Chief Engineer
furnishes an abstract
of the reports obtained
by him from different
Engineer Officers, re-
-garding the comparra-
-tive cost of, and pre-
-ference given by
Native workmen to,
the

the different tools in use among them, whether manufactured in Europe, in the Arsenals of this country or by private native artizans. The information having been called for in our Extract from the Minutes of Consultation in the Military Department dated the 10th of June 1856 No. 1408. From the various statements made by these Officers, it would appear that altho' superiority of workmanship is obtain in the English implements, it is on the whole preferable to make the tools in the Arsenals of this Country, both on the score of economy and in order that the peculiar shape and fashions to which each division of the Country is accustomed and prefers, may be attended to.

The Chief Engineers' letter and enclosures will be communicated to the Military Department, with reference to the Extract Minutes Consultation in that Department quoted above.

G Copies to the Chief Engr. Dispatch
3 — Duty Offrs with Copy of the letter & 13 Displ. Enclos.

Public Works 1857 Sept.th
Dr. to Cons. 4th September

No. 1677

Extract Mins. of Cons.
of 4th September 1857.

Communicating to the
Min.y Dept.t an abstract
of the replies obtained
from different Engr. Of-
ficers, regarding the Com-
parative cost of Ste-
:ference given by na-
:tive workmen to the
different tools in use
among them. -

No. 2042.

C25 Clay st. 1929