M.R.O. 14-5,459—28-10-25.

MADRAS RECORD OFFICE.

Government of Madras.

Revenue **DEPARTMENT.**

G.O. No. 2789 Press MIS.

356 . 357

Dated 13 . 10 - 1866.

Not to be folded or roughly handled

Proceedings of the Madras Government, Revenue Department,
13th October 1866.

No. 356. Read the following Proceedings of the Board of Revenue, dated 18th September 1866, No. 6,661:—

Read the following letter from the Acting Collector of Sea Customs, to the Secretary to the Board of Revenue, dated Madras, 23rd August 1866.

Proceedings of Government, Miscellaneous No. 188, dated 8th August 1866.
Proceedings Board of Revenue, No. 5,223, dated 30th July 1866.

See paragraph 12 of my letter to Secretary Board of Revenue, dated 25th July 1866.

1. I have the honor to be in receipt of the Proceedings marginally quoted.

2. I had already anticipated the wishes of Government with reference to the devising of a cheap and simple instrument for the removal of the thorns.

3. While seeking the co-operation of Colonel Cadell (Commissary of Ordnance) and of Colonel Hutchinson (Superintendent of the Gun Carriage Manufactory), I had thrown out to each the same idea, which each slightly modified; Colonel Cadell's Chief Civil Master Armourer, Mr. Flavell, producing an implement very much like a sugar nippers, and Colonel Hutchinson one more like a sugar tongs.

4. Opinions are divided as to which implement is entitled to the preference. Mr. Flavell claims for his durability, while Colonel Hutchinson's has the recommendation of simplicity and economy, and as regards efficiency they are pretty nearly on a par, though, I think, Colonel Hutchinson's will be found to work more quickly because it is more handy. The pincers (Mr. Flavell's) can be made for Rupee 1-8-0 each, while the tongs (Colonel Hutchinson's) cost only 4 Annas each, and are so simple that they could be readily made out of hoop-iron by any village blacksmith.

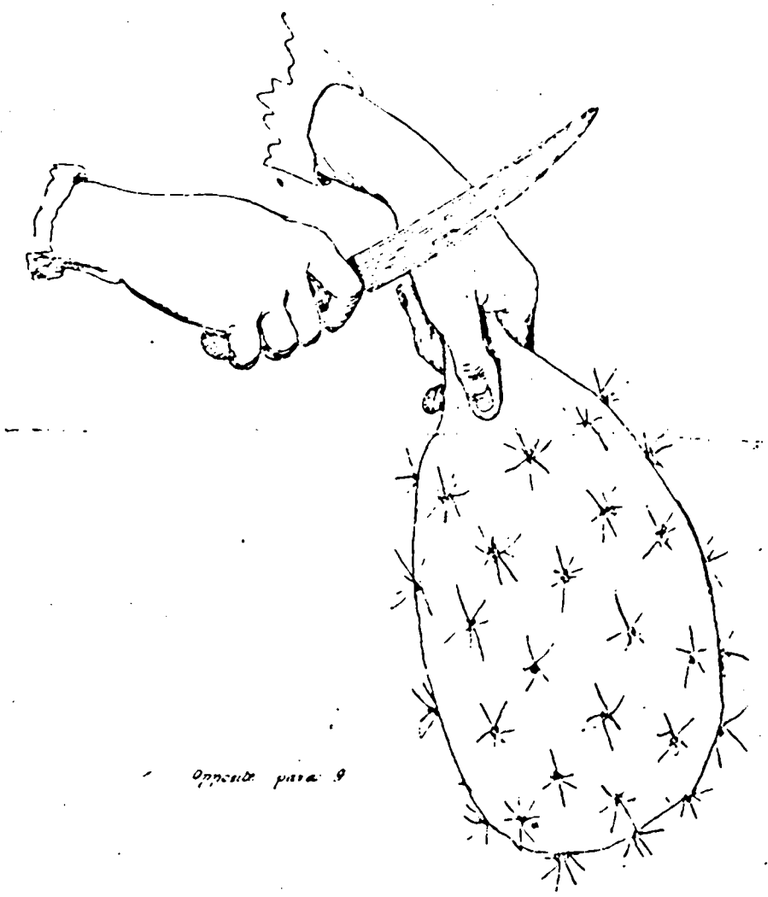
5. In my opinion the tongs are best suited to the poverty of the agriculturalists, and the ignorance of the smiths, of this country. Colonel Miller (Commissary General) decidedly concurs in this preference. Dr. Biddie (Secretary to the Agricultural Society) and the Farm Committee have not yet concluded in favor of either. Improvements are not suggested by any one, and the efficiency of either of these simple implements appears to be generally approved.

6. Under these circumstances, I conceive I cannot do better than forward you one of each pattern, with the recommendation that both patterns be adopted and left to find their own admirers till something better is devised.

7. It will have been observed that the thorns grow in clumps, the base of the longer species being surrounded by a crowd of minute ones. These all stand in a woody ring designed to give them a firm root. The proposed implements are meant to take out the whole clump with woody root and all at one clip. The tongs possess the extra advantage that they are convenient for holding the leaf, as well as for operating on the clumps of thorns, one pair of tongs being used in each hand for this purpose.

8. I would recommend that, in using these tongs and pincers, the leaves operated on should be as fresh as possible, so that the minute thorns may not fall out and fly about, and as a few will nevertheless often fall, it would be well to

have a pitcher of water at hand in which to plunge each cleaned leaf before slicing it.



Opposite para. 9

9. The mode of slicing is clearly shewn in the marginal drawing kindly supplied by Sir W. Brett. Some have wasted labor, I hear, in slicing as fine as French beans are cut for the table, which is quite unnecessary.

10. The Board desired a "thorough trial of the cactus food in every village and town in each Talook where a reliable Revenue Officer is stationed." As easy removal of thorns will facilitate such a trial, the Board may be prepared to recommend that samples of these implements be sent to every Collector, Divisional Officer, Tahsildar, and Deputy Tahsildar. In such case I would venture to suggest the following distribution.

11. The pincers being the more expensive, I hesitate recommending that they should be furnished to other than Collectors of Districts and their Divisional

Officers, and for the purposes of a trial it will for the present suffice to supply one to each such Officer. I would also supply two tongs to each of these Officers that one may be used in each hand (paragraph 7 supra). They will require two common knives each for slicing up the cactus when freed from thorns, and the aggregate cost of supplying these common knives from Madras will probably be much less than if they were separately purchased in the local market by each individual Officer. Excluding the Treasury Deputy Collectors, and including those in charge of Salt, the total number of these Officers is 85. There are 154 Tahsildars, and 173 Subordinate Magistrates, and Deputy Tahsildars. I would suggest that each one of these be supplied with two tongs and a knife. To these should be added the requirements of the Commissary General, as shewn in his letter enclosed, together with a margin for the Agricultural Society, the Farm Committee, Zemindars, influential Royts and other purchasers. The whole is shewn with estimated cost in the annexed list. If sanctioned, the Commissary of Ordnance has kindly undertaken to execute the pincers, and Colonel Hutchinson the tongs and knives.

12. I propose this distribution in deference to the Board's expressed wish, that the cactus food should "be tried in each village and town in each Talook where a reliable Revenue officer is stationed," for, without such an expressed wish on the part of the Board, I should have hesitated to recommend even the expenditure now proposed, as I am quite alive to the probability that, in some Districts, it will prove a profitless outlay. I do not myself imagine that the cactus leaf is calculated to *take the place* of grass, but only to *supplement* it when wanting, for we have not yet arrived in India at the artificial state of stall-feeding. In those Districts in which rain has now fallen, the cattle will immediately be driven, according to custom, to the nearest jungle where grass is to be found, and the cactus will be despised till the pressure of the next drought is felt. The use in Malta of the superior cactus there abounding is the result, there also, I believe, not of preference, but of the pressure, arising out of a large meat-consuming population on a rocky island, poor in grass and in sufficiently supplied with any other provender. Similarly, it is only to meet pressure in this country that I have proposed it in the famine time, when the season reports shewed everywhere "pasturage deficient, pasturage none, cattle starving," and so forth. At such times the cactus is, I think, a valuable provender. More than this I have never advanced, though some readers have, I fear, drawn more sanguine conclusions. I think it should be found useful every dry season, at least for the working cattle, which the Ryot has to keep with him in his village, and specially useful in special years like the present. In ordinary years, and with the bulk of the cattle in the wet season, it must be apparent that it will be much cheaper for two or three lads to herd several hundred cattle, than for a multitude of people to hand-feed each individual ox. While not withdrawing from anything I have hitherto advanced, I would wish to guard against being considered to have taken an unpractical, and too sanguine, view, by being given credit for more than I really have advanced.

13. It has been suggested to boil the leaf. This process certainly does away with the necessity for removing the thorns, for it renders them limp and harmless. It will probably be the best method for large consumers provided with caldrons,

and also a convenient way for feeding pigs; but I doubt if the cost of fuel and boiling pots will not be more a matter of consideration to the Ryot, than setting his aged and female dependants to remove the thorns.

14. It has also been suggested to strip off the whole side of the leaf with one cut of a knife, but in this arid country the leaf is so thin and irregular in shape, that I do not think this plan would be found feasible.

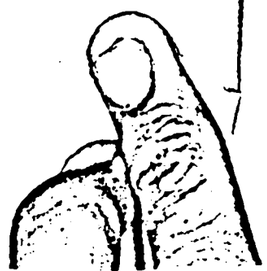
15. I have never seen one, but am told there is a handy little machine at Home contrived at once to peel the pine-apple and to take out the eyes. I have sent for one, in the hope that it may suggest an idea for a machine to deal with cactus in cart-loads. I am not, however, sanguine on this head.

16. It appears I was wrong in accepting the vulgar creed, that piles are induced by the use of the prickly-pear as food, it being simply the presence of the coloring matter that has led to this belief.

17. Dr. Biddie published a letter, stating that he found, by examination, more starch in one leaf of cactus than in another. Casual readers are not unlikely to have drawn therefrom the too general conclusion that the common cactus contains less starch than the more rare and thornless sorts. Eventually such may or may not be found to be the case, but one microscopic examination can scarcely suffice to prove it, nor can Dr. Biddie be held to have authorized such a too general, premature, and perhaps fallacious, conclusion. It has been ascertained that each individual blade of wheat, for instance, contains more or less starch and sugar at different stages of its growth, and similarly the very same cactus plant would be found to have at different times different proportions of starch in its leaves. The leaf is naturally most rich in nutriment just when the plant is prepared to put forth its strength in bearing flowers and fruit. I imagine nothing short of a series of examinations, extending over many months, could accurately settle this question. Roughly we may conclude, I think, that the species bearing most fruit will be found to have most nutriment in their leaves.

18. I venture these remarks simply because I think it would be a very great pity to discourage the use of the species which abound, and to fly at once to the more rare sorts and the exotics. Even though exotics be imported, it will be long before they can be sufficiently propagated, and we should not be in too great a hurry, without proper premises, to fall in with the too general propensity to condemn what is common, for no better reason than that it *is* common. It should be remembered that even the common cactus was first imported to this country by Europeans. Instead of being cultivated in hedge-rows, and yearly pruned for use, it has been allowed to grow rank or been rooted out as a noxious weed. By culture it may improve. It is at least acclimatized, and abundant, and found to be useful. It should, therefore, not be discarded.

19. I suggested that it should be used cooked as food for man. One Member of the Board mentioned that he had heard of its having been introduced and regularly used for that purpose; and Dr. Biddie has now eaten it with satisfaction. It would appear, then, that its use for this purpose might be safely encouraged. If



stion that it be used in Famine Relief-houses is not approved, it might at ntroduced in Jails, under the eye of the visiting Doctor.

The rich coloring matter which we find so largely in the fruit must, as uence, exist in the leaf also; and accordingly, there it is found in large es by the cochineal insects. It would be interesting to know of what it , and whether means could be devised for readily extracting it in large es from the leaf for use as a dye. I believe it is proposed to manufacture om the mulberry leaf without the medium of the silk worm. Similarly, we dispense with the services of the cochineal. The idea is perhaps crude, but ay possibly be some day utilized by Chemists.

21. Dr. Biddie allows me to mention that he is preparing a paper on Cactus, and I should have delayed this letter till it could accompany his, were not his enquiries of a nature that must necessarily take time, and did it not seem advisable that I should lose none in submitting the sample implements required by Government.

22. In my first letter to Sir Wilford Brett, I mentioned my unsuccessful experiments with pulque, and he has obligingly sent me the enclosed extract from Ruxton's travels in Mexico, from which it would appear that its culture is the source of a considerable revenue. It might be encouraged in this country to the enhancement of the revenues without encouraging drunkenness.

23. Dr. Cornish brings to notice, in "The Madras Times," I see, that the leaf also of the aloe has been recommended as provender for cattle. I have noticed them browsing on it in seasons of drought in this country. The common aloe of this country may, therefore, prove an edible one. The pith and the bulbous roots are edible by man.

List of Tools proposed for sanction.

	Rs.	A.	P.
For Collectors of Districts and Divisional Officers 85 Nippers, with a margin of 15, as proposed in paragraph 11; total 100 Nippers, at Rupee 1-8-0 each...	150	0	0
For do. do., and margin do. do., 200 Tongs, at 4 Annas each...	50	0	0
For do. do., 200 Knives, at 4 Annas...	50	0	0
For 327 Talsildars and Sub-Magistrates, together with a slight margin at 2 Tongs each, say 700 Tongs, at 4 Annas each...	175	0	0
For do. do., 350 Knives, at 4 Annas each...	87	8	0
	512	8	0
Commissary General.			
26 Tongs, at 4 Annas each...	6	8	0
26 Knives, at do.	6	8	0
	525	8	0

ENCLOSURE No. 1.

From the Commissary General, Madras, to the Acting Collector of Sea Customs, Madras, dated 20th August 1866, No. 2,448.

With reference to the Proceedings of Government, Revenue Department, dated 8th August 1866, No. 1,997-188, I have the honor to request that you will have the goodness to send me (26) twenty-six of the small tongs proposed to be used in extracting the thorns of the prickly-pear leaf, for distribution among the Officers of this Department. If any particular form of a knife be better than another for cutting up the leaves, I should wish to have (26) twenty-six. A very common cheap knife should answer the purpose well.

ENCLOSURE No. 2.

[*Extract from Ruxton's Travels in Mexico.*]

As we were now in the land (par excellence) of pulque, the drink of thirsty angels, a short description of this truly national liquor and its manufacture will not be out of place. The maguey American aloe—Agave Americana—is cultivated over an extent of country embracing 50,000 square-miles. In the city of Mexico alone the consumption of pulque amounts to the enormous quantity of eleven millions of gallons per annum, and a considerable revenue from its sale is derived by Government. The plant attains maturity in a period varying from eight to fourteen years, when it flowers; and it is during the stage of inflorescence only that the saccharine juice is extracted. The central stem which encloses the incipient flower is then cut off near the bottom, and a cavity or basin is discovered, over which the surrounding leaves are drawn close and tied. Into this reservoir the juice distils, which otherwise would have risen to nourish and support the flower. It is removed three or four times during the twenty-four hours, yielding a quantity of liquor varying from a quart to a gallon and a half.

The juice is extracted by means of a syphon made of a species of gourd called a *cojote*, one end of which is placed in the liquor, the other in the mouth of a person, who by suction draws up the fluid into the pipe and deposits it in the bowls he has with him for the purpose. It is then placed in earthen jars, and a little old pulque—madre de pulque—is added, when it soon ferments, and is immediately ready for use. The fermentation occupies two or three days, and when it ceases, the pulque is in fine order.

ENCLOSURE No. 3.—Two Instruments.

Submitted to Government, with reference to Government Order, dated 8th August 1866, No. 1,997, and with the Board's request that the manufacture of the Tongs, Nippers, and Knives, as proposed, may be sanctioned.

No. 357. ORDER THEREON, 13th October 1866, No. 2,789.

Miscellaneous.

Sanction is accordingly granted for Rupees 525-8-0, and the Board of Revenue will make the necessary arrangements for having the instruments made and distributed at an early date.

(Signed) J. D. SIM,
Secretary to Government.

14-2-15

Pro- 8 August 66 to 18 Sept 66 Enclosures 4 to 7 inclusive

" 18 Oct. Enclosure 8

No. 2789.

Pro- 1866. Department.

Pro. of Govt for October

No. 34514

PROCEEDINGS OF THE BOARD OF REVENUE,

Dated 18th September 1866.

Dep S Actn —

Received 4c

C-3 Instrument Dd.

No. 6,661.

Pro of the Board of Rev

Dy 5th December 66 C 4362

Submitting letter from Acting Collector of Sea Customs, and requesting to sanction the manufacture of proposed patterns of Tongs, Nippers, and Knives for removing the thorns and cutting up the leaves of the prickly-pear.

C No 2789. 13 Oct.

With Order

Lauchonside accordingly granted for Rd 525-6-11 and the Board of Revl will make the necessary arrangements for having the instruments made & distributed at an early date

Will

13 Oct 66

1 Rd of Revl Dispatch Ca

6 Accts Cl

27 Oct 66 B 1/3567.35