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MADRAS RECORD OFFICE

Government of Madras

Public

DEPARTMENT

G.O. No.	<u>49</u>	~~Press~~
~~B.P. No.~~		Mis.
Dated	<u>22. 1.</u>	<u>1892</u> 195

Not to be folded or roughly handled



PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following paper :—

From Mr. E. Sturmer, Madras, dated
13th January 1892.

Order: 22nd January 1892 No 49

Mr. Sturmer will be informed that
Government declines to take any steps in the matter
(True Extract)

Frederick
Chief Secretary.

To

E. Sturmer Esq.,
Central Hotel,
Madras.

2.18

DEPARTMENT

No. 49

On Her Majesty's Service only.

of the Court of Session 19/1/92

To

unlike in the

E. A. Hume Esq

Contract Royal

Madras

For the

Chief Secretary

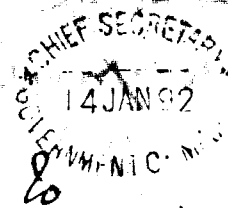
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Central Hotel - Madras
15th January 1892

The Chief Secretary
to the Government of Madras

Sir

I have the honor to acknowledge receipt
of your letter of 12th instant.

I am sorry I was not sufficiently
explicit in my letter to your address of 8th Dec.

What I desire is

1st To bring to the notice of Go-
vernment a highly - Economical
method of cooking food which
is especially adapted for
application in India.

2nd To be allowed an opportunity
of introducing it among the
people at the expense of the
Government if I can satisfy
the Government as to its ad-
vantages and the likelihood
of its being generally adopted.

3rd To effect further reform in
the direction of fuel economy
by modifications of the fire.

Plan and cooking pot if
this first attempt be favorably
received

4. To be rewarded according
to results if I can succeed as
I hope to do in rendering
important service to the
masses

Assuming that the Government
will be prepared to favorably consider the
matter and give the system which I am
advocating a fair trial, I go fully into
details in the note herewith enclosed and
discuss what I would not otherwise have
discussed -

I have the honor to be
Sir

Yours most obedt servant
Edwin Sturges

Remarks on the ordinary Indian fireplace
and cooking pot, with brief suggestions for their
improvement, and a description of a highly
economical method of preparing food which has
to undergo the process of boiling, which method
commends itself as being especially adapted for
general use in India, where the ordinary food
of the population consists mainly of boiled rice,
pulses and vegetables.

The ordinary Indian fireplace appears
to the writer of these notes to be faulty in the following
respects - namely -

- (a) It admits too readily of an inflow of air
for supporting combustion thus supplying
an excess of actual requirements.
- (b) It too freely allows escape of the heat
and gaseous products of combustion.
- (c) It provides no means of controlling
or regulating the supply of the air
or the discharge of the other
and in consequence of the above defects
it is wasteful of fuel in a high degree -

2. Again, the shape of the cooking pot
ordinarily in general use, is perhaps the one
most favorable to further waste, namely that
due to loss of heat by contact of air, exposing
as it does an unnecessarily large surface to the
cooling influence of the air.

3. Lastly, the method of cooking almost
universally adopted here and elsewhere in preparing

food which has to undergo the process of boiling is irrational, unscientific, and highly wasteful as will be shown further on.

4. It thus appears that all of the conditions under which is performed the operation of cooking the ordinary food of the bulk of the population, namely boiled rice, dholl, and vegetables are favorable, and highly so, to waste of heat that might be usefully employed; and that therefore it is imperatively needed that a reform should be introduced as speedily as possible, when from a palpable want of knowledge of correct principles enormous waste is taking place every day around us.

5. The remedies to the defects pointed out in paras 1 & 2 are obvious. Present arrangements should be modified so as to provide for

(a) regulating the supply of air and the discharge of the gaseous products of combustion.

(b) Checking the currents of heated air and diverting it into channels so as to apply it to perform as much work as possible before its final discharge into the air.

(c) altering the shape of the cooking pot and otherwise improving this utensil so as to make it more effective.

6. This last, and the proposed modifications of the fireplace, which latter would in reality be but slight and simple, and such as might easily be made by each household for himself

would no doubt at first sight appear formidable and be objected to and opposed. They need not then be pressed upon the attention of the more prejudiced until likely to be understood and appreciated and need not be further considered or referred to in this note.

7. It would be sufficient in the first instance to introduce a reform simply in the method of applying heat, fireproof and cooking pots being used as they are, unaltered and not all their inherent defects, allegations in them being effected later on, if what is now proposed be favorably received.

8. As regards the mode of applying heat and the method of cooking to be adopted, the prevailing practice in boiling rice, dholl, and vegetables is to immerse these articles in water, apply heat, raise the water to boiling point and continue the boiling till the food is sufficiently cooked.

9. In the more rational and highly economical method now proposed and described further on the boiling is not carried on till the food is fully cooked, but the food is intended further consumption of fuel, as effectually and perfectly prepared by what may be described as a cooking process, advantage being taken of the greater capacity of water for heat to effect the purpose desired.

10. As it is a well established, though unfortunately not equally well known or appreciated scientific fact that the specific heat of water is

most likely greater than that of other substances; or in plain language that a given weight of water to be raised to a given temperature requires far more heat than would be required by the same weight of other substances, carried through the same range of temperature.

11. Taking for example equal weights, say 100 lbs of each, of water, iron & mercury to be raised from $62^{\circ} F.$ to the boiling point of water, the specific heat of water being 1.000, that of iron .130 & that of mercury .033 there would be required as many as 10,000 thermal units in the case of the water; against only 1,950 in the case of the iron and 500 in that of the mercury for effecting the same change in each.

12. The large quantity of heat taken up by water in being raised to boiling point and subsequently given off in cooking might under conditions favorable to its being so employed be made to serve several useful purposes, among them that of effectually cooking food as is now proposed.

13. Taking advantage then of the great capacity of water for heat, and removing the pot with its contents described in para 8 soon after boiling point is reached, and setting it aside to cook out of all contact of air, surrounded on all sides by some non-conducting substance such as chopped straw, paddy husk or as is to retain the heat, it will be found that the food has been as thoroughly and perfectly cooked by a slow process of self-cooking

without further consumption of fuel, as it would have been more speedily done but at greater cost had the operation of cooking over the fire been continued as described in para 8.

14. It will thus be seen that up to a certain point the two methods are identical, with this difference that in one case that of the present prevailing method, a larger quantity of water must necessarily be heated and that beyond this point fuel has to be expended in one case and not in the other.

15. It will be noted also that in the method now advocated no great trouble is involved or expense incurred & no tax made on the skill or intelligence of the operator, the departure from established practice is but slight while the benefits to be derived is material. This method should therefore commend itself to all and as almost the entire food of the nations in most parts of India is prepared by the process of boiling the introduction of this highly economical system of cooking appears highly desirable effecting as it would economy to a large extent.

16. A comparison between the two methods as regards cost shown according to the results of the writer's experiments, from 33 to very nearly 50 per cent of fuel saved.

Edward Sturmes

12/1/92 No 220

Public Dept.

H.M.

Submitted to the Honor.
able Member with refer-
to his note on C. 81 - put up.

From

E. Sturmer Esq.,
Madras.

38B.
15/1.

17/1

The proposal made is closed.

2/1.

order 22 Jan 92 p 49

Mr. Sturmer [has] informed that
Govt. declined to take any steps in
the matter.

13 Jan 92
14

1/1

2/1

/ From orders /

38B.
22/1.

22 Jan

DESEATCHED

E. Sturmer Esq.

22 Jan 92

IN M.S.

Suggestions for an
improved method of cooking food, &c.

C. 18/
R. 2/2/1

WITH ORDER

*Recd
+ I 26/11*

ORDINARY, MS.

<i>Public</i> DEPARTMENT. G.O., DATED <i>22-1-92</i> No. <i>49</i>

INDEXED.

When given for copying

[Despatch Abstract.]

*Superior Mr. I strongly
that the Govt declines
to take any steps in
on his suggestion
for economy in the
consumption of fuel*

clerk