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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue DEPARTMENT

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Proceedings of the Madras Government, Public Department,
10th December 1873.

No. 26. Read the following letter from W. S. FOSTER, Esq., Acting Collector of the Godavery District, to the Hon. W. HUDLESTON, Chief Secretary to Government, Fort St. George, dated Rajahmundry, 17th October 1873, No. 23:—

I have the honour to submit the report called for in G.O., No. 1413, dated 30th December 1872, Public Department, paragraphs 21 and 24.

2. With regard to paragraph 21, I am fully impressed with the desirability of obtaining the fuller information required regarding the variations in temperature, rainfall, &c., in different parts of this district; but, anxious as I am to carry out the wishes of Government, I cannot find any means of attaining this end without incurring great expense.

3. I am sure the Government will agree with me that these returns are worse than useless if not accurate; and, to ensure accuracy, expensive instruments must be obtained. Taking it for granted that, at present at least, the various taluq stations are the only localities where the daily readings and observations could be taken regularly, it would appear necessary to provide for each taluq a dry and a wet bulk thermometer, a rain-gauge, a barometer self-registering, an anemometer (see paragraph 26 of Dr. Wright's Report) and other instruments for calculating the quantity of ozone, electricity, &c. Under these circumstances, I do not know how to proceed, and await the further instructions of Government.

4. Now as regards paragraph 24, I have made careful inquiries concerning the importation and use of opium in this district, and I enclose copies of the reports of my Divisional Officers on the subject.

5. Opium is very largely imported into the Godavery District from the Nizam's dominions *viz* Jaggayyapeta; indeed, I believe that very little of the large amount used in the district comes from any other source. Malwa opium is largely used, but that also comes through the Nizam's dominions. A slight quantity is exported to Vizagapatam and other places north. From all the inquiries I have made, I am led to believe that the value of the drug used comes to no less than seven lakhs of Rupees per annum. It is used by persons of both sexes, the least estimate being that forty per cent. of the male population, and twenty-five per cent. of the female population, are opium-eaters, other estimates amounting to as much as seventy-five per cent. amongst males and fifty per cent. amongst females.

6. All classes of society use it indiscriminately, but the use amongst Brahmins and Vaisyas is not so extensive as amongst the other classes.

7. I am satisfied that it is not used only as an indulgence. It is considered a cure for several diseases in their final stages, and a preventive against some diseases especially rife in this district. After steady use for a time it is found so difficult to break through the habit that persons who have once taken it seldom leave off.

8. There are several indications that the drug is used as a medicine, amongst which I may mention the following:—

(1.) It is given in small doses to children.

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(2.) It is not used as a rule by healthy adults before the age of thirty or forty, indicating that it is not taken as a source of pleasure.

(3.) It is not so much used by the upper classes as the lower, indicating again that it is not taken as a self-indulgence, but is considered necessary to those living a life of greater exposure and less abundantly supplied with clothing and good houses.

9. The drug is considered an admirable febrifuge, and is administered to fever-patients. It is supposed to keep out cold and prevent rheumatism and ague.

10. I believe that the extensive use of opium in this district is due to the extensive prevalence of fever, and that if the fever could be checked so would the use of the drug. Conversely I think it unadvisable to attempt arbitrarily to stop its consumption at present.

11. With regard to the present high rate of sickness from fever in this district, I have to make a suggestion; and, first, I will ask the question; and, high, I think, will bear practically on the question of the Government to the following extracts from the correspondence prior to the 1st of January 1864.

12. Dr. Balfour puts no faith in the high rate of sickness from fever in this district, I have to make a suggestion; and, first, I will ask the question; and, high, I think, will bear practically on the question of the Government to the following extracts from the correspondence prior to the 1st of January 1864.

12. Dr. Balfour puts no faith in wind. He thinks that the causes of it may have been brought into activity by

13. Dr. Wright

13. Dr. Wright says that mortality is low" (see 19).

14. Speaking of the ordinary weather, as a rule, there is nothing but in damp weather, and more pronounced smell is at times very offensive." H. of the district, he says:—"In the dry season about the villages in this district, early after a slight shower of rain, the people find themselves unable to go any

15. Assistant-Apothecary Sangivi writes that in the villages there are "no drains to carry off the dirty water which is allowed to stagnate about the place." He states that the tanks and wells are fairly pure, but that "the waste water stagnates about them and drains back into them" (see 21).

16. Dr. Cornish says:—"So far as the local rainfall may be regarded as a cause of fever, it may be remarked that, in the year 1868, when the north-east monsoon rains failed, the fever failed also in a great degree; while in 1871, when the north-east rains partially failed, the fever prevailed, but in a less degree than usual. In 1869 and 1870 there was no failure of the north-east rains, and no failure of fever. These connexions of rainfall and fever may be mere coincidences, but I think it may be assumed, from the experience of the past, that a moderate rainfall in October in the Godavery District and the tract of country to the northward is essential to the production of the causes of fever in November and December" (see 9).

17. As to the sanitary condition of the villages he says:—"The villages of the Godavery District are neither better nor cleaner than villages in other parts of India" (see 12).

18. Again he states (see 20) — "The main facts collected by myself and Dr. Wright show that there is a special season of the year when fever may be

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expected to appear in the Godavery Distr, and that this special prevalence is, at least, coincident with the setting in of the north-east monsoon winds and rain."

19. Dr. Cornish is wrong there. The fever does not set in till November, and the prevalent fever-months are November, December, and January.

20. With regard to the fact that the fever is less in those parts of the district principally affected by sea winds, Dr. Coish thinks that "the fever miasm is probably neutralized or destroyed partially by sea-air, or by great dilution in the atmosphere, or by oxidation."

21. I further request the attention furnished by Dr. Cornish, which show that April, May, June, July, August, September, sensible increase in August. In November number of deaths in that month being treble and less still in January, diminishes in January, and steadily decreasing till May.

22. The facts, then, are as follow :—
First.—The fever is least during the months of January, February, and March, but increases, *not simultaneously with the break of the south-west monsoon, but about a month later*, and becomes exceedingly prevalent, *not simultaneously with the break of the north-east monsoon, but about a month later*, causing great mortality all towards the end of January.

23. *Secondly*.—The fever has been more prevalent in later years than formerly.

24. *Thirdly.*—The fever is encouraged by a low temperature. But the statistics show that it is not the low temperature alone but the presence of water in the district which causes high mortality. There is more water lying about in November than in December or January. At the temperature of December and January is lower than that of November, yet the fever is far more prevalent and destructive in November than in the succeeding months.

25. *Fourthly*.—Mere *smells* do not te malaria, but the malaria is more prevalent in *damp* villages.

26. *Fifthly*.—The medical authorities employed in investigation found that in all villages there was a quantity of stagnant water lying about.

27. *Sixthly*.—The fever varies in strength with the rainfall of the north-east monsoon, and does not set in till a month after the rains have fallen.

28. *Seventhly and lastly.*—Although the sanitary condition of the villages in districts still there is more fever.

29. Now I think the plain straight forward deduction from all these facts is this.

30. The principal cause of the great prevalence of fever is the presence of a superabundance of water, and that not fresh but stagnant water, lying on the ground. Rainfalls, and especially heavy rainfalls, actually clear the ground and do good, but after the rainfall is over the water lies all about the villages in pools and ponds stagnating and breeding malarial miasma. The heavy north-east monsoon rains fall in October. The rain collected and lies on the surface of the soil stagnating. After a month or so it produces malarial fever to a very serious extent, so that November sees all the villages stricken down with fever, and this fever is of a

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different type to that met with in the hill-tracts. It has a different origin, the fever of the plains being caused by stagnant water, while that of the hills is probably caused by decayed vegetable matter.

31. In December these stagnant pools are slowly drying up, and the fever decreases. In January they are almost all dried, and the fever is still less. By February there are few left if any, and the fever suddenly ceases. In March, April, and May, there being little or no rain, there is no surface stagnation, and the fever is least prevalent. In June the south-west monsoon breaks, but the water is not yet stagnant, and, therefore, there is no increase of fever. In July the rainfall of the monsoon has accumulated and lain a month or so stagnant. The fever makes a sensible increase. In August the July rains have stagnated and the fever increases. There is also a slight increase (but very slight) in September. In October the north-east monsoon breaks with great violence. But in that month the water is not stagnant, and the rains have to a certain extent washed away the stagnant pools lying about before. Consequently the fever is no higher, and even slightly less than in September. In November the stagnation of the large accumulations of water left about by the rains of October causes a violent outbreak of fever.

32. All the observations made by none of them worked on that theory, for I cannot see any other theory with which the medical authorities concerned, though in with it to a remarkable degree; and the recorded observations are compatible.

33. Believing, therefore, as I do, that the prevalence of fever in this district is due to the causes mentioned above, I come back to the hint thrown out by Dr. Balfour, to which I unhesitatingly accede. The increase of fever in this district within the last few years is due to causes "of a local nature brought into activity by recent changes in the district." I believe that those changes are to be found in the great spread of irrigation and irrigation works within the last few years. The water now lying over the country is far in excess of what it used to be, and the works of irrigation have checked large numbers of small village-drains and thrown back the stagnant water near the houses. Pools lie and stagnate which formerly were drained off.

34. I do not think that fever is caused so much by water lying on irrigated fields, the decay of which water is speedily absorbed into the growing crops, as by the pools near the houses which have no other use but to lie and rot, and I think it is clear that it is our duty to try and drain off these pools and relieve the villages from the presence of those deadly receptacles of malaria.

35. With this view, I have the honour to forward to Government copy of a letter from my late Acting Sub-Collector Mr. Stuart, received in the early part of May this year on the subject of minor village-drainage.

36. If the villages can be drained, not only will the country greatly benefit agriculturally, but the malaria will be checked.

37. Mr. Stuart proposes to make a general improvement in minor village-drainage, combining drainage of the irrigable fields with drainage of the village-sites themselves.

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38. He has drawn up a scheme for each village in the Ramachendrapur and Amalapur Delta Taluqs, prepared on the proposals and estimates of the ryots of each village separately. If this is carried out, the probable cost for Ramachendrapur Taluq will be about Rupees 45,000, and that for Amalapur about Rupees 40,000; total Rupees 85,000.

39. Mr. Stuart has not exaggerated in his statement that "the irrigation works have in many cases swamped the village-sites in the delta, and left the villagers to live in a morass."

40. I cannot, however, recommend Government at once to adopt Mr. Stuart's scheme and spend so large an amount on it; we must first find accurately the levels of the ground; and I would suggest that the Engineer Officers of the District might be directed to include in the yearly budgets some works for draining villages, and so gradually to provide the means of draining them all.

From E. L. PEARSE, Esq., Acting Head Assistant Collector of the Godavery District, to W. S. FOSTER, Esq., Acting Collector of the Godavery District, dated Ellore, 23rd August 1873, No. 173.

With reference to your memorandum, No. 11, I state that I have, since seeing Dr. Cornish's report, and classes about the use of opium. The use of opium is almost confined to people past middle life, and informants generally say that those of a less age seldom if ever use it otherwise than medicinally as a chief cause of the later growth of the habit. I find a considerable minority of the old women (at least twice a-day.

2. Medicinally it is used as a cure for rheumatic pains, and as a prophylactic against the effects of dampness and malaria, this of course almost exclusively in the Delta Taluqs, and to a far greater extent by those who spend much time in the canals than by anyone else. But, with this exception, it is said that as a prophylactic it is more generally used for children, and even infants, than for grown-up people.

3. Another, and perhaps the worst use of opium is as a soporific for little children. The extent to which women are employed on all sorts of work, I do not think it is to be wondered at.

4. I cannot venture to make a guess at the proportion of opium-eaters to the population. The only real datum I can find to go upon is the Taluq. The worth is sold at the weekly fairs of his taluq. One eighth of an Anna's worth being the usual dose, this would give almost exactly 20,000 doses a day. From this we must first make one deduction for what has been sold two or three times over medicinally; and then, considering that the consumption for what is used medicinally generally take two doses a-day, the calculation will give us perhaps 6000 opium-eaters. The same Taluqdar, however, estimates the number of opium-eaters at twenty-five per cent. of the population. I suppose he means twenty-five per cent. of those who have arrived at the ordinary age of opium-eaters, which would certainly not be too high. The percentage in Ellore Town is much higher, and that in the Upland Taluqs lower than in Tanu.

5. I would mention, with regard to the fact a subject in cases of fever, that they have one compound apply the starvation-system to them. The opium is not abandoned, and it necessitates the taking of food.

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From A. SUDERSHANA ROW, Deputy Collector on General Duties, Godavery District, to W. S. FOSTER, Esq., Acting Collector of the Godavery District, dated Bhimavaram, 17th July 1873, No. 163.

As directed in your docket, dated the 31st May last, No. 134, I beg to report on the consumption of opium in this district.

2. This drug is exported in enormous quantities from His Highness the Nizam's dominions. First it is imported at Jaggayypeta, a place of great emporium in the Kistna District. Thence it is brought to Ambazcepett, a place of considerable trade in the Amalapur Taluq. At the latter place the retail and wholesale dealers of opium purchase the drug, and sell it at fairs and other places throughout this district.

3. In the two taluqs composing this division, opium worth Rupees 30,000 is estimated to be consumed annually. I can safely say from the results of my searching inquiries before me that the observations of Dr. Cornish regarding the consumption of the drug in this district are very well-founded.

4. Opium is eaten in this district by the people without distinction of caste or creed. In my calculation males at forty per cent. and females at twenty-five per cent. are opium-eaters. The drug is eaten very punctually twice a-day, viz., morning and evening. The maximum quantity used at a time by grown-up men is double Anna's weight, while the minimum is one-fourth of it. This drug is administered also to babies and children in very small quantities.

5. The drug which is very bitter is not eaten voluntarily. Chiefly the drug is from one or the other chronic disease. The from one disease or the other, he is advised by and relatives to resort to the practice of its remedy for consumption, asthma, dropsy, &c.

6. It is much to be regretted that such. This indicates that the district is not healed. avowedly say opium-eaters, if any, are not in the eyes of the people. Their organs of sense are dull, and their ideas are confused. In short, the pleasure stage of opium-eaters is brief compared with the painful stage that follows it. Opium-eaters can easily be distinguished by their appearance.

7. The further increase in the number of opium-eaters can easily be checked by establishing dispensaries at the cusbah station of each taluq, and rendering medical aid to the people liberally. In the absence of systematic and professional aid, the people cannot but seek shelter of opium with a hope of living at least for some time under its painful and very unpleasant influence.

8. Opium is sold at 4 Annas a tola.

9. This drug is not a check upon fever. It rather supports the disease.

From J. F. SNAITH, Esq., Acting Sub-Collector of the Godavery District, to W. S. FOSTER, Esq., Acting Collector of the Godavery District, dated Rajahmundry, 9th August 1873, No. 276.

With reference to your dockets, Nos. 175 and 221, dated 31st May and July last, respectively, I have the honour to forward, herewith, a translation of the replies from the Tahsildars of the Sub-Division regarding the consumption of opium. It will be seen that nearly half of the population use opium, in various doses, the largest being as big as a soapnut-seed, and the smallest that it is chiefly imported into the district from a green-grain seed called pajara ginja, and that it is chiefly consumed for the purpose of checking diarrhoea and relieving rheumatic pains; but it is my opinion that the climate of Hyderabad via Jaggayypeta. It is generally used by all classes of people, especially Soodras and other lower orders of men. It is reported that at the drug is chiefly consumed for the purpose of checking diarrhoea and relieving rheumatic pains; but it is my opinion that the climate of this district being analogous in some measure to that of the fens of Lincolnshire and Cambridge-shire, the use of opium among the poor both here and there (where I knew it to be very

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common) is to be ascribed to the same cause, i.e., it is taken to resist damp and its attendant discomforts, catarrhs, neuralgia, and ague, and the use of arsenic in styria and illyria is due to the same cause, i.e., its action is preservative. I believe also fever will disappear here as it is fast doing in the fens when the land is similarly drained.

2. I am not aware of any instance in which the use of opium has created fever or any other disease of a particular kind. I am told it obscures the faculties and produces extreme weakness.

3. With reference to question 4, "Enumerate the ill-effects which opium produces when the following in Squires' Companion to the British Pharmacopoeia, 8th Edition, pages 193 and 194:—

* A very high authority.

"Opium has three main physiological effects. It diminishes pain (insensibility). It causes sleep. It arrests secretion, excepting that of the skin, which it promotes. In small doses it excites the vascular and nervous systems, increasing the rapidity and fulness of the pulse; this is followed by sleep, accompanied with perspiration. It is apt to produce nausea, headache, thirst, and constipation. If the dose be large the sleep becomes intense, and there is difficulty in waking the patient. By continued use it impairs the appetite and digestion. It also acts on the respiratory system, diminishing the frequency of respirations, and thus impairing the oxidation of the blood."

4. For whatever reason this drug be taken, my Sheristadar, who has lived in this district since his birth, says that he has no doubt that more than fifty per cent. of the population habitually use it, and in some villages almost every inhabitant.

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No.	Questions.	ANSWERS OF		
		Rajahmundry Tahsildar.	Amalapuram Tahsildar.	Ramachendrapur Tahsildar.
1	From what places is opium imported?	From Jaggayapeta and Hyderabad.	Generally from Jaggayapeta	From Jaggayapeta in the Kistna District, Hyderabad, Malwa, and thereabouts.
2	What percentage of males and females uses opium?	Among males 75 per cent., and among females 50 per cent.	On the average males and females 75 per cent.	Among males 50 per cent., among females 30 per cent.
3	Describe the largest and the smallest doses of opium used?	The greatest dose is as big as indur seed (2 Annas' weight), and the smallest posara seed (green gram).	The greatest is as big as kunkudu seed (soapnut), and the smallest pesara seed.	The greatest dose weight 4 Annas, and the smallest 1 grain, 4 of a grain is mixed in the drink for infants of one year.
4	Enumerate the ill-effects which opium produces when doses of more than ordinary size are taken?	Intoxication, interruption of fecal evacuations, much thirst, dozing by day, but no satisfactory sleep by night.	Heat, sores, swelling, itching of the body and inebriation.	Decrease of hunger, badness of blood, weakness of body, constipation, and consequent thereon febrile symptoms.
5	What is the value of opium that is consumed in the taluq every year?	Rupees 2,00,000	Yes, only to the Narsapur Taluq ... weight).	Rupees 40,000.
6	Is opium exported to any places?	Yes, to Vizagapatam, Vizianagram, Peddapur, Jaggayapeta, Dummagudem, and to small villages.	Yes, only to the Narsapur Taluq ...	Yes, to Vizagapatam, Ganjam, &c.
7	What is the price of best sort of opium per tolah?	4 Annas	3 Annas	5 Annas.
8	At what age is opium generally eaten?	In childhood from year 1 to 8, and in middle age (years 30) opium eating is commenced or recommenced and continued till the close of life.	No distinction of age; persons of all stages of life.	In infancy from 5 months to 1 or 2 years. Afterwards from 10 or 12 years to death. The dose increases as the age.
9	For what diseases is opium used as medicine?	Cough, cold, rheumatic pains, looseness of the bowels, also to keep up vigour in old age.	All forms of rheumatism ...	Looseness of bowels, indigestion, gastralgia, rheumatism, flatulency, and asthma.
10	What castes of people generally use opium?	Generally all castes, especially Sudras.	Generally all castes ...	All castes, but less among Brahmins and Veisyas.

(Signed) J. F. SNAITH,
Acting Sub-Collector.

RAJAHMUNDY,
10th August 1873.

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From A. J. STUART, Esq., Acting Sub-Collector of the Godavery District, to W. S. FOSTER, Esq., Acting Collector of the Godavery District, dated Samulcottah, 29th April 1873, No. 149.

I have the honour to represent to you that, in the course of different tours through the delta, it has become very clear to me that one of the chief wants of the delta villages is a complete system of *minor village-drainages*.

2. The great irrigation works have cut across the natural lines of drainage in every direction, and have, by altering the conditions of large areas with reference to drainage, altered their qualities as respects producing power, in some cases for the better, but in many cases for the worse.

It was perhaps unavoidable, if great works were to be carried out steadily and rapidly, that such cases of injury done should at the time be wholly disregarded; as, had the Engineers stopped to think of and provide for every such case at the time they were constructed, we should have been without them now; but I think now, after the Government have reaped an enormous return from the works, that the time has come to make up in a liberal spirit for the injuries done by interruption and change of drainage, and any other cause of loss which can be fairly made out, and traced to these works.

3. I admit that much is being done at a heavy cost to provide a system of main drainages new and complete for each delta separately—a very necessary proceeding; but what I wish to draw attention to is the requirements of the villages in the shape of minor village-drainage such as drain areas of a few square miles.

4. Another cause which has rendered a general scheme of minor drainage a thing to be desired is the physical conformation of the delta. It has evidently been formed as a succession of backwaters (or *andas* or swamps or *madugus* as they were called after the sea had retreated from them), which have been gradually raised into dry land; these *andas* are spoon-shaped hollows and either by the retreat of the sea or the rise of the land; these *andas* are spoon-shaped hollows lowest point in the centre, and rising gradually to their edges; they are very various in shape and size, varying as much as from half-a-mile to many miles in length; they are usually much greater in length than in breadth. I think a close examination will prove that the whole delta is but the remains of a series of such long and narrow ponds the remains of the old backwaters, which the sea naturally left one behind the other, as it retreated from point to point, and the latest line of which will be familiar to every one in the line of backwaters now existing along the coast from Madras north and south, and which in course of time if the sea continues to retreat will be left high and dry and become first a fresh-water swamp, and then a spoon-shaped area of cultivated land such as I describe.

5. If this fact be clearly realized, it will also be clear how much such a formation, being in fact but a series of swamps and ponds one below another, would naturally stand in need of a special drainage to carry the rain-water from *anda* to *anda* to the main drainages and to the sea. So it must have been before the construction of the canals, main and minor irrigation-channels, and new artificial lines of drainage, by which the then existing system of drainage was broken up; and the evil has unquestionably been aggravated by the action of the irrigation works in throwing large quantities of water over the lands, and so keeping them in a state of saturation, thereby greatly aggravating the effects of any heavy fall of rain, for which the original natural provision by absorption in a thirsty soil no longer exists. It is hardly necessary to remind you that, though judging by the absence of remissions, and the steady increase of land revenue and water-tax, we naturally conclude the great prosperity resulting from these great works, yet such data are an unsatisfactory basis to reason upon, and that facts, such as excessive and over-supply of water to irrigated land due to imperfect drainage, or such as the deterioration of lands cultivated dry due to the imperfection of drainage, and caused by the saturation of surrounding lands, though this make no difference in the land revenue, or the water-rate, make all the difference between a rich and contented and a poor and discontented cultivator.

6. Impressed with the above facts, and by the constant complaints of the ryots about village minor drainages, I called for and herewith forward statements prepared by the villagers themselves, for every village in my division, in which they show their own ideas of what is wanted, and

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of what this is likely to cost. And this, I think, will give a notion of the maximum requirements, though it is very likely that the estimates are lower in most cases than they will be found when actual measurements, and not guesses, are their basis. The rough estimates for the two delta taluqs of this division amount to the following sums:—

	RS.
Ramachendrapur Taluq	41,625
Amalapur Taluq	37,990

7. I have to recommend that the provision of complete minor drainages for each village be taken in hand as a separate branch of the general irrigation-system, and a separate sum allotted to such works annually, and that the improvements be dealt with and worked out by villages the requirements of each village being dealt with separately in consultation with its inhabitants. It cannot be doubted that the Government will acknowledge that they are morally bound, looking to the immense sums collected in this district from the works, to treat with liberality all cases in which it is shown that duties and responsibilities have been unwillingly incurred, by improvements that have changed the whole face and character of a wide tract of country such as this delta is, or that they will not endeavour to mitigate, as far as they can, any of the ill-effects, which, admitting its generally beneficial character, so great a change cannot fail to have brought about in exceptional cases.

8. From this point of view, I beg further to indicate, as a subject very well deserving attention, the condition of village-sites in the delta, because the irrigation works have in many cases swamped them, or parts of them, and let villagers to live in a morass, which, it appears to me, is probably not good for their health; second, because irrigation has so increased the value of land for cultivation, that every scrap of available land round the villages, up to the very walls of the houses and backyards, has been ed up and cultivated and no room is left for the spread of the population (which must increase the increase of production due to irrigation); as the population grows the village-sites do attract, as every one is on the look-out to steal a small piece of land here and there for rice, and no one has any interest in adding lands now cultivated with rice, and which would be paid for to the village-sites. This state of things can hardly be otherwise than injurious to health, and is certainly an indirect effect of the irrigation. The improvement and extension of village-sites in the delta, therefore, is another matter in which I would press the responsibility of Government to look in the face and provide for ill-effects due incidentally to the great system of the Godavery Irrigation Works.

9. These are the principal points which I have now to bring to your notice. As regards the village-site question, I beg to refer to my letters, No. 350, dated 21st October 1872, and 20th August 1872, No. 105, * for further suggestion on this subject. I am unable to point out from what source funds for this purpose should be provided, or what department or branch of the Government should take the question up. I wish only to show that it ought to be taken up by some branch, and I think that the Government would see that it was if the facts were before them.

No. 27. ORDER THEREON, 10th December 1873, No. 1267.

Ordered to be communicated to the Surgeon-General, Indian Medical Department, and to the Sanitary Commissioner.

2. The Governor in Council is much indebted to Mr. Foster for his full report on the subject.

3. There seems no reason whatever to doubt that the exceptionally wide consumption of opium in the Godavery District is due to the unhappy prevalence of fever in this extensively irrigated, and as yet inadequately drained, district-like cause producing like effect, as in the fen country in England. The drug

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imported from or through the Nizam's country, and is evidently used mainly as a medicine. No injury to the State revenues arises from this consumption as Dr. Cornish seems to suppose, and certainly under the circumstances no justification is shown for imposing any tax on it.

4. The Governor in Council cannot but feel convinced that the deplorable prevalence of fever in the district is mainly due to the cause so forcibly sketched by Mr. Foster and Mr. Stuart—the utterly inadequate means of drainage in a tract of country whose swampy nature has been aggravated by the great system of irrigation works; and he resolves to direct that this important subject be forthwith and most earnestly considered in the Public Works Department, and that systematic arrangements be made, with the least possible delay, for remedying this most crying evil, whereby at present the gift of financial prosperity, which has been bestowed on the district, is coupled with the curse of disease. The Governor in Council cannot but feel that very heavy responsibility rests on Government in this matter; and, as a practical step towards remedying the evil, he directs that a sum of one lakh of Rupees be annually assigned to the Agricultural Public Works Budget for works of drainage in the Godavery, supplemental to the great arterial schemes that are already under execution, and that such additional aid shall be afforded to the District Engineer as may be needed in the way of subordinates competent to take levels for carrying out the works. Where the flooding is in no way due to the irrigation works loans may be made to the villagers to enable them to execute the necessary work themselves.

5. As a further measure of relief the Governor in Council resolves to direct the Board of Revenue to cause the area of village-sites to be liberally revised and the necessary remissions of assessment made to allow of their adequate extension.

7. The Government desire that full effect be given to this resolution with the least possible delay.

(True Extract.)

W. HUDLESTON,
Chief Secretary.

To the Collector of the Godavery district.
" Surgeon-General, Indian Medical Department.
" Sanitary Commissioner for Madras.
" Public Works Department.
" Board of Revenue.
" Revenue Department.

Ed. J. Wright.

Proceedings of the Madras Government, Public Works Department,
15th April 1874.

Read the following papers:—

No. 156. Read the following Proceedings of the Madras Government in the Public Department, dated 10th December 1873, No. 1,267.

No. 157. Memorandum from Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, to Colonel G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Fort St. George, 14th January 1874, No. 34.

THE work in connection with the effective drainage of the villages in the Godavery Delta, which the Government desire to have at once taken up in earnest, and for which an annual provision of one lakh of rupees in the Budget of the Irrigation Department has been ordered to be made, is of great magnitude, and it appears to me to be certain that no satisfactory progress will be made unless Government can make available the services of two or three young officers to carry on the investigations, and afterwards carry out the necessary works.

2. During my recent tour I had an opportunity of seeing much of the Eastern Delta during and after a considerable, but by no means extraordinary, rain-fall; and though much has been done to improve the drainage of the lands generally, with all the attention that can be given to this important subject, it will still take several years before the work already sanctioned can be completed. The general expenditure in the delta is very large, and labour is not very abundant. It would be difficult and hazardous to stop the improvement works, because, as may be readily understood, they have to be carried on together, and alterations in one place necessitate the early completion of the corresponding alterations elsewhere. This work in some directions is not getting on as fast as is desirable, because the requisite superintendence is not available, and though, possibly, some works here and there may be postponed without serious inconvenience to the cultivation, it is not probable that any material alteration of the programme of work for 1874-75 could be effected.

3. During the rains of the latter part of October many complaints, which were well-founded enough, of the submergence of lands were made by the ryots, and I myself saw very large tracts of country in the western part of the Eastern Delta entirely under water to a depth of several feet. Very little could be done immediately to alter this state of affairs, because the main drain, the Takee, is at present utterly inadequate to the discharge of the flood waters. These floods were to but a very small extent due to canal water. To render this drain really effective two or probably three seasons' work will be necessary, and it is now being taken up in earnest. Although the ryots did not complain of the state of their villages, there can be no doubt that the inundations must have affected these likewise; but so far as I am able to judge it is the exception rather than the rule that the delta canals have obstructed the village drainage. This point, however, can be determined only by the detailed investigation which will be made.

4. To relieve the areas occupied by villages from rain-fall water is from a professional point of view a matter of no great difficulty, where the villages occupy a

Cost of 1873-74

PUBLIC.

THE COLLECTOR OF THE
GODAVARI DISTRICT.

10th December 1873.

G.O. No. 1573, 26.12.73.

RECEIVED
NOV. 20. 1873

From the Godavery District—
on a letter from the Collector dated 10th Dec. 1873, in the case of the Godavery District, and copies of the same forwarded to the Secretary to Government, Public Works Department, and to the Secretary to the Government of India.

as is usually the case, relatively the high village must have levels taken all over and drained, and all hollows must be filled and must be connected with the nearest branch drain. The work will involve a good deal of interference with private or village property, but with the help of the Revenue and Village Officers probably no great difficulty will be experienced. It is municipal in character, and particularly private interests will have to give way to the common benefit of the village.

5. In order to make a commencement three survey parties be at once organized, one group of villages, say, twelve or fifteen, and what is required to be done, and to prevent any stagnation of water within the boundaries of their sites, and then arrange for carrying off the drainage into the nearest branch drain. From this first group some idea will be obtained as to the nature and cost of the work to be done, as also of the source of funds for the necessary outlay. Wherever drainage is being carried out, and yet it should not be overlooked that from agricultural funds may be reasonably obtained, and in strict equity the greater part of even this charge might there be removed from the Irrigation Budget. The Eastern Delta completion estimate provides Rupees 4,69,300, and the Western Delta estimates Rupees 2,87,750, for the purpose.

With the village maps of the Government are to provide for the work, a good deal of light upon the subject may be achieved, and whether to incur the cost, the first thing is to ascertain what is wanted and to estimate its cost.

No. 158.

ORDER THEREON.

CIVIL WORKS, No. 18.

G. O., in the Public Department, No. 1,267, of 10th December 1873, the District Engineer of the Godavery will be once, as suggested in paragraph 5 of the Engineer Officer attached to his work of three survey parties, to be sent out a group of villages, which he will report, through the Chief Engineer for Irrigation, on the strength and cost of these survey parties, as he takes the up, on a permanent engagement from year to year, and the Chief Engineer for Irrigation will hold at his disposal, from month to month, from the Agricultural Reserves a standing advance of Rupees 5,000 to provide for these establishments and the immediate execution of the works.

15th April 1874, No. 980.

To make a practical commencement with the work of village drainage, as determined on in paragraph 4 of 1,267, of 10th December 1873, the District Engineer, on the strength and cost of these survey parties, as he takes the up, on a permanent engagement from year to year, and the Chief Engineer for Irrigation will hold at his disposal, from month to month, from the Agricultural Reserves a standing advance of Rupees 5,000 to provide for these establishments and the immediate execution of the works.

which their levels shall have shown to be necessary, such as the levelling and drainage of streets, the filling up of hollows, and the connection of the village drainage channels so defined with the nearest irrigation branch drain.

2. To accelerate the progress of the work the Engineer Officer allotted to the Kistna District for special duty, will be transferred temporarily with his establishment to the Godavery District on return of Lieutenant Campbell from privilege leave, and will be placed in charge of a second set of survey parties on another group of villages to be similarly selected by the Collector and Engineer; and the results of their operations shall be reported annually for the information of Government, accompanied by illustrative surveys, up to the 30th June of each year.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the District Engineer, Godavery.
" Chief Engineer for Irrigation.
" District Engineer, Kistna.
" Public Department.
" Revenue do.
" Officiating Controller of Public Works Accounts.

Exd. S. T. Austin.

10 Spare Copies

will follow from the

Revenue N^o 1261 Dept.

Govt. of 1874 Madras.

PUBLIC WORKS.

To

THE DISTRICT ENGINEER, GODAVERY.

Ac. Ac. Ac.

Dated April 18th.

Recd. 21 April/74. 1261.

C. O., 18th April 1874, No 18

APRIL

Nos. 156-158

20/4

Dis. Mr.

Godavery Delta.—Passing orders on
orders relating to the drainage of the
Godavery Delta.

Communicated to the
Board of Revenue
20 April 74. C. M.

573 the 18th of April 1874