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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue DEPARTMENT

G.O. No. / ~~B.P. No.~~	270-71	Press / ~~Mis.~~
Dated	7-4-	1891 / 196

Not to be folded or roughly handled

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—letter from H. S. THOMAS, Esq., F.L.S., F.Z.S., First Member, Board of Revenue, dated Madras, 11th July 1888.

ABSTRACT.—Submitting a Fishery Bill for Madras Presidency together with a statement of objects and reasons.

READ—Proceedings of the Board of Revenue (Land Revenue), dated 24th September 1888, No. 821, Mis.

ABSTRACT.—Submitting for the information of Government, with remarks, demi-official from Mr. W. S. Symons, Ootacamund, bringing to notice that the Bhavâni river is denuded of fish by the Moplahs.

READ—letter from the Chief Engineer for Irrigation, dated Chepâk, 9th October 1888, No. 33-W.

ABSTRACT.—Forwarding copy of memorandum No. 205-M., dated 8th August 1888, from the Chief Engineer for Irrigation, regarding fish lock to be constructed in the North Branch of the Lower Coleroon anicut.

READ—Proceedings of the Board of Revenue (Land Revenue), dated 3rd December 1888, No. 7109, Mis.

ABSTRACT.—Submitting to Government, with remarks, letter from the Collector of Nilgiris informing that certain places of the Bhavâni river which are denuded of fish as reported by Mr. Symons in his letter to Mr. H. S. Thomas do not belong to his district.

ORDER—dated 7th April 1891, No. 270, Revenue.

Miscellaneous.

The draft Fishery Bill for the Madras Presidency submitted by Mr. Thomas, late First Member of the Board of Revenue, in the first of the above papers, has been allowed to lie over pending the decision of the Government of India upon the draft India Fishery Bill which was forwarded to it with letter, No. 5223, dated 3rd September 1888. No intimation having as yet been received from the Supreme Government as regards the manner in which this Bill has been dealt with, His Excellency the Governor in Council resolves to address the Government of India upon the subject.

2. The following letter will be despatched to the Government of India :—

(Here enter No. 271 R., dated 7th April 1891.)

(True Extract.)

(Signed) C. A. GALTON,
Secretary to Government.

To the Commissioners of Land Revenue.
„ the Public Works Department.
Copy to the Legislative Department.

Exd. A. Aubert,

65 Copies.

Govt of {1891} Madras.

REVENUE.

Issued

Recd.

Encl.

G.O., 7th April 1891, No. 270.

APRIL.

Fishery Bill.

Resolving to address the Government of India enquiring whether any action has been taken by that Government on the draft of an India Fishery Bill drawn up by Mr. H. S. Thomas.

3

MADRAS, 11th July 1888.

GOVERNMENT OF MADRAS
20 JUL 88
REVENUE DEPARTMENT

From

H. S. THOMAS, Esq., F.L.S., F.Z.S.,
FIRST MEMBER, BOARD OF REVENUE,

To

THE SECRETARY TO GOVERNMENT,
REVENUE DEPARTMENT.

SIR,

In pursuance of G.O., dated 28th February 1888, No. 175, I have the honor to submit a Fishery Bill for this Presidency, together with a Statement of Objects and Reasons.

2. It is drafted in accordance with the instructions sketched in the above Order.

3. As I was therein directed to avail myself of the results of the Delhi Conference, I have added provisions for compelling the erection of fish ladders in private rivers, and for the maintenance of stock pools, because they were approved by the majority of the Conference.

4. The Conference also desired that provision for preventing the diversion and bailing out of rivers should be drafted, with the reason therefor, in order that the matter might be reconsidered. This, therefore, also finds place in the Bill.

5. The Pearl Fishery provisions are distinct, and the need of them seems to have escaped the memory of Government.

6. The only addition that I have made on my own responsibility is the section about close time, and that because I thought it a matter of such obvious importance that I should be blameworthy if I did not at least submit it for consideration. The purposes which it serves are explained in the statement of objects and reasons.

7. The Government Order above quoted required also that I should draw up a list of rivers to which the provisions of the Bill should be applied. This I have found a matter of considerable difficulty—firstly, because I naturally had not a personal knowledge of the piscicultural characteristics of every river in the Presidency; secondly, because on turning to maps for information, I found them misleading. For instance, the Vaigai, the Cauvery and the Coleroon are mapped and painted blue as if they were fine broad perennially-flowing rivers. I happened to know from personal experience that the Vaigai seldom reaches the sea, and that all three rivers are dry sandy beds for many months in every year. There might be other rivers of which I had not the same personal knowledge, about which maps might be equally misleading from a piscicultural point of view. I had, therefore, no alternative but to seek the aid of the local knowledge of Collectors and their Tahsildars. In order to give the minimum of trouble to Collectors, and to obtain uniformity of information, I did not content myself with a mere letter asking their assistance, but I also enclosed printed forms; and, further, to guard against mistake, I accompanied them with translations in Tamil and Telugu, carefully made under my own eye; and, in order to lose no time, I completed them and arranged for their despatch ready printed before starting for Delhi. Nevertheless some returns from Tahsildars have been made in such obvious misconception of what was wanted that the Collector* has rightly sent them back as useless, but revised returns have not yet come. Other Collectors have explained Tahsildars' mistakes, which has

* North Arcot.

been very satisfactory as compared with other returns which came in with misconceptions unexplained, and with others again which have never been sent at all,* notwithstanding its having been pointed out in the first circular, and repeated in a reminder, that the time allowed me was short. The list of rivers which I submit must therefore be a necessarily imperfect one.

* Cuddapah. | Vizagapatam. | Ganjam.

8. I do not wish to appear to impute want of care in the returns, as it is hard to estimate the allowance that should be made for Tahsildars, to whom the subject is novel, and who are accustomed to view rivers only from an irrigational point of view. I only wish to point out that the list requires the close personal attention and revision of Collectors and their officers, to whom it will presumedly be circulated together with the Bill on which their views will be invited, and by whom, as well as by their subordinates, the matter, as explained by the statement of objects and reasons, will perhaps be then better understood.

9. In my list of rivers I have divided them into two classes—

I. Those to be dealt with above tidal limits.

II. Those to be treated within tidal limits.

10. With regard to class I, my aim has been to include only such main rivers as were known to breed fish of the larger edible sorts worth conserving as food for man, such fish as Mahseer, the several Labeos and generally all the larger Carps, which siluroids and other predatory fish are sure to follow. All the minor rivers which breed none but small sorts of fish I have endeavoured to eliminate. In so doing I have aimed, where my personal knowledge of the rivers was insufficient correction of the returns, to err rather on the side of throwing out than of entering too many, because it is better to omit and add hereafter, than to enter unnecessarily. Still I may have made errors on both sides. Collectors must be good enough to come to our assistance.

11. But when small streams are tributaries of main rivers, I have freely entered them because it is in these small tributaries that the larger fish turn aside to spawn in flood time. For instance, little rivulets like the Siruvany, the Coonoor stream and the Kalár are the breeding places of the Mahseer and other large fish, and in such small streams are the fry reared, and by them is the main river, the Bhaváni, restocked. It is therefore of primary importance that small meshes and fixed engines should be excluded from tributaries small as they are.

12. With the Tanjore rivers I am personally acquainted. Roughly calculated there must be over 500 miles of them, and they are beset at every possible turn with fixed engines of the smallest possible meshes, so that fry of a single drachm in weight cannot pass them, and valuable fish of the larger sorts are caught in them, and sold at the insignificant price of a twelfth of an anna for as many as can be taken up in two hands together, and yet I omit all those rivers at a stroke because the fry, if not caught in those fixed engines, would simply find their way into the rice-fields, and be eaten by egrets (paddy-birds).

13. I omit those rivers from the list which Government has desired me to draw up, because I would not exclude the fixed engines from them, nor regulate the mesh in them, the two purposes for which the Government desired the list to be drawn up. Still I wish to draw very marked attention to the way in which those rivers can be utilized. They are simply 500 miles of the most valuable fry-breeding grounds by natural process that can possibly be desired. Not to repeat, I desire a perusal here of paragraphs 15, 16, 17 of Board's Proceedings, dated 8th February, 1888, No. 119, which are annexed to be circulated with the Bill as there may be other artificial rivers, notably in connection with the Kistna and Godávari irrigation works, that ought to be treated in the same way.

14. With 500 miles of the most valuable fry-breeding grounds that can possibly be desired, the Tanjore district has 1,500 tanks which never run dry from years end to years end, and which at their lowest hot-weather limits cover 1,856 acres. In other words, Tanjore has, with 500 miles long of natural nursery, close upon three square miles of unfailing reservoir in which to rear the fry thus brought to her,

three square miles sub-divided into the most easily manageable areas, three square miles distributed most conveniently about a thickly-populated country just where animal food is required. It is animal food brought home fresh to every ones door. It is hard to over-estimate the value of Tanjore as a fish farm, it is hard to depict the value of the farm in language sufficiently forcible to command the attention and insure the conversion of minds untutored to such specialities. As remarked in the Board's Proceedings above quoted, the marvel is that wasteful destruction now reigns, and has reigned throughout the British rule in India, and through the Tanjore dynasty which preceded it, where the very forces and implements of destructive waste lie ready to our hands to be utilized as a perfect system of natural pisciculture.

15. Without repeating in detail the explanation of the system given in the Board's Proceedings above quoted, I will only say here that it is proposed to let the cruives or fixed engines stand, on the condition that, when so required, the more valuable sorts of fish are picked out by the cruive owners and sold to the Fishery Department or to the general public, alive for transport to the three miles of detached reservoirs above mentioned. These cruives or fixed engines are now all sublet by the contractor of all the fisheries of the district, and without waiting for legislation it will be easy to enter in future contracts that they are let subject to such conditions, and even without waiting for such entries in future contracts it will be found in some, and probably in most cases, that the trifling sum of Re. 1 a thousand is sufficient remuneration to induce the cruive owners willingly to pick out, and keep alive in readiness, all the more valuable sorts of fry, and it is thus that their interests should be voluntarily enlisted on the side of pisciculture, rather than by contract obligation, which should only be there to fall back upon in singular cases of unreasoning contumacy.

16. One more proviso is necessary. The localities in which these fixed engines or cruives are habitually set should be ascertained, so that such as are doing more harm than good, may be prohibited. For instance, I find from the returns that in the Mannárgudi taluk of Tanjore is the Sri Kothandarámasámy tank covering 350½ acres when full and 150¼ acres when at its lowest hot-weather limit, and supplying by its overflow seven private and five Government tanks aggregating a minimum hot-weather acreage of $63\frac{9}{10}$. This total minimum hot-weather acreage of $63\frac{9}{10}$ is supplied by the Vadavár. If across this river, or across any minor channel from it, there is a cruive intercepting the passage of the fry to the tanks, it is obvious that that particular cruive should be prohibited, because it is much better that the fry should be allowed to run directly into the tanks to become large fish and substantial food for man, than that they should be destroyed as fry of two or three drachms each in weight, and sold as such at the insignificant value of one pie for a double handful of some hundreds. Of the private tanks fed by the surplusage of the Sri Kothandarámasámy tank, one is a masonry built one of an unvarying perennial 27 acres, which is always as much as from 10 to 20 feet deep, and stands in the cusbah town of Mannárgudi, so that it is a good illustrative case of animal food brought actually to the doors of the consumers, the fry that come down the river weighing 2 or 3 drachms each, growing in this tank to 20 lb. each.

17. Briefly, then, it is proposed that the cruives or fixed engines in the Tanjore rivers should stand, and be utilized where they entrap fry that would otherwise be wasted in the rice-fields, and that they should be prohibited only where they directly obstruct the passage of fry to perennial reservoirs. The cruives of the latter sort will, I think, be found to be the few.

18. The exceptional character of the Tanjore rivers is put forward in the above detail not only for the information of Government, but also that other Collectors may inform us if like rivers exist in other districts. It seems probable that the irrigation systems of the Kistna and Godávari rivers may cause similar circumstances, and returns from the Chidambaram taluk of South Arcot speak of channels in a way which is not understood.

19. The so-called rivers of Tanjore are in reality artificial branches of the Cauvery and Coleroon taken at an incline that keeps them in flood time running like rivers, and if the irrigation channels of the Kistna and Godávari, which are not known to me

personally, are not like them in character, but have again an individuality of their own, requiring yet another system of treatment, it may be well to mention here that they should be inspected before they are abandoned as useless pisciculturally. Periodically run dry for repairs, they would seem to be on the same platform with the canals of Northern India, about which much interest was shown at the Delhi Conference, with the general conclusion (i) that the bare fact of there being 28,000 miles of such canals was in itself sufficient reason for their being examined; (ii) that the consideration that they were unquestionably the sole property of Government, and could therefore be dealt with unimpeded by any questions of private rights, was an extra reason for examining our property in them; (iii) that at present they were the cause of a wasteful destruction of immature fish life on an enormous scale; and (iv) that it was quite possible that areas might be found which would lend themselves to the easy construction of reservoirs in conjunction with the canals, so that when the canals were run dry for repairs, the fry might be saved in the reservoirs, and that for this purpose the canals should be specially inspected. This last was the proposal of the President, warmly supported by several members of the Conference, and I would simply add to it that (v) the proposition seems equally applicable to our fresh-water canals; that (vi) as it is the Government itself that has, by its canals, caused this wasteful destruction it owes it to the public to at least make full inquiry if it can prevent it, and that (vii) the proposition has in effect features in common with the system above alluded to as ready to our hands in Tanjore, a system that will be again referred to when we come to reservoirs.

20. But keeping for the present to rivers, and to class I thereof, "those to be dealt with above tidal limits," the proposals are briefly that, with the exception of such as are similar to the Tanjore rivers, and with the exception of fresh-water canals about which we are not yet sufficiently informed, all the rivers enumerated in list A should be brought under the Act, for the purpose of clearing them of fixed engines, and of prohibiting the use in them of nets having meshes of less than the minimum size hereafter to be settled and notified by Government.

21. The principle of regulating the size of the mesh is all that is at present put forward. Details of application, such as the actual size of the mesh in varying circumstances, would be premature at present. With other subsidiary details of working they had best wait till the principles have been enacted.

22. It remains to provide stock pools for these rivers as indicated in the Bill and in the statement of objects and reasons. But these can only be selected by personal observation after the Act is at work.

23. The use of dynamite and poison will of course be generally interdicted as provided in the Bill.

24. There are rivers which are conterminous with Bombay and with the Nizam's dominions. It is desirable that they should work with us if possible. But if they are not so inclined much can still be done in such large rivers by dealing with one-half of the river up to the midstream thread, and with such tributaries as enter from our side.

25. The Cubbany, Pannamaram, Noogoo and Sholadi, with their tributaries the Periya, Terriote and Noolpoya, rise in Malabar forests and run into Mysore. There is no use in our interesting ourselves in them, breeding grounds of the Mahseer, &c., though they are, unless Mysore reciprocates. If she does, the river benefited will be the Cauvery, which eventually becomes important in British territory.

26. Passing now to the second class of rivers, "those to be treated within tidal limits," it will at once suggest itself that this class will include the estuaries of the larger rivers contained in class I, and also many minor rivers whose chief importance is in their estuarial portion and all salt-water canals connecting them. Estuaries are a medium for bringing the produce of the seas into the interior among the habitations of men. The manner of treating them is referred to in the statement of objects and reasons. It is only necessary to add here that the list of them (B) is probably very imperfect, as I am to blame in not having told Collectors that I wanted this information, for I thought that I could get it from maps without troubling them.

But I find, when too late, that maps are again misleading, for they show the mouth of the Vaigai, for instance, as a noble estuary, whereas it is naught, and they naturally give no indication that access to the Cooum is blocked by the sand bar at the mouth and by the lock gates on the canal near the Adyar. It is to be hoped that Collectors will enable us to complete the list. It should contain all estuaries and all salt-water canals that are not so blocked. Still the list contains an ample area to begin upon. It is to be regretted that I have no means, without inadequate labor, of showing the very extensive mileage of fresh and brackish fisheries that these lists (A and B) contain.

27. In the size of the mesh an exception should be made in favor of shrimp and prawn nets which need not be interfered with.

28. We pass now to purely fresh-water reservoirs or tanks. I have taken note of none but those that are returned as perennial, and of these I have taken only such as are river-fed, and not only river-fed, but fed by a river of such dimensions as I have thought worthy of conservancy in itself, because only from such rivers, with few known exceptions, could I expect that really valuable large sorts of fish would be brought down as fry in the floods to stock the reservoirs. Of these again I have eliminated all that cover less than an acre when at their lowest hot-weather limits. The balance of reservoirs thus remaining covers an aggregate area of 40,700 acres when full, and 16,298 acres when they have dwindled to the lowest hot-weather limits to which they ever shrink. In other words, we have $63\frac{1}{2}$ square miles of water in which are received the fry that are bred in the rivers and come spontaneously down, and such is the exceptionally rapid growth of Indian fresh-water fish * that while in the course of a twelve-month these $63\frac{1}{2}$ square miles of water are shrinking with the drought to about $25\frac{1}{2}$ square miles (25·4 exactly), the fry have grown on an average from a drachm each to a pound each and are mature enough to spawn.

* Worked out in my "Tank Angling in India," page 121.

29. I cannot but think that these areas are very much understated, from Tahsildars, with their minds pre-occupied with irrigation, omitting tanks which did not serve that purpose, and we have also four Collectorates or a sixth of the Presidency, from which returns have not yet come in. But even as it is, it is surely not a farm to be neglected, a farm of $25\frac{1}{2}$ square miles at the least, which grows drachms of food into pounds in a twelve-month.

30. In Tanjore the subject was well understood by the present Collector and in that district alone the returns show 1,516 tanks with a minimum hot-weather acreage of nearly three square miles. Many of these are private ones of such small dimensions that they reduce the general average. But they are all river-fed, as above explained, and are not improbably in chains of tanks, so that, whether large or small, they are well adapted for the rearing of fish from drachms to pounds. Nevertheless I have thought it sufficient to begin on those which covered not less than an acre at their lowest, and have eliminated all under those dimensions, till in the Tanjore district alone we have a fish farm, of the favorable nature above explained, of more than two square miles, say 1,370 acres at its lowest, of which 567 acres are public and 802 acres private property.

31. These reservoirs I have divided under three heads—

I. Government reservoirs.
II. Private reservoirs.
III. Government reservoirs that are reserved for drinking purposes.

But these lists cannot be quoted hereafter as any manner of evidence that tanks classed as private really are private property, for many of the returns may be simply village accountants' statements without any superior inquiry.

32. In the first, I propose to limit the size of the mesh as in the protected rivers. The second, I only mention to show the claim which the public has on our assistance. In the third, I propose to abstain from netting altogether because it stirs up the bottom and befouls the water which, on sanitary grounds, should be kept as clear as possible for drinking purposes. But angling need not be objected to. Such tanks are few. The returns say there are only 23 acres of them in the Presidency.

33. In tanks then the Government fish farm lies wholly in class I. The fishing of these tanks is ordinarily let out on contract, and the habit of contractors is to wait till they are at their lowest and then to net and re-net them with the smallest of meshes till they have cleared out the last tadpole.

Such treatment annually depletes these tanks, and it is only because each succeeding flood time brings in a fresh supply of fry from the rivers that these tanks hold any fish at all. If the mesh to be used in them be restricted to the minimum size hereafter to be notified under the rules, some fry may be left in these tanks, and some fish of minute sorts, *e.g.*, *Haplochili*, which will improve the commissariat of the better sorts.

34. This is proposed as the general rule, but in the Tanjore tanks and those situated like them, in which we have the exceptional advantages above noticed, millions of fry of the better sorts should be annually purchased from the cruive owners at Re. 1 a 1,000 and annually turned in to grow in a twelve-month from drachms to pounds. A few peons, and they should be selected, if possible, from the fishing classes, with an inexpensive overseer, might readily be trained to do it systematically and economically. They need to be trained—(i) in the selection of species; (ii) in the manner of capture and handling; (iii) in the proportion of fish to water—the most difficult of all things to impress on the native mind; (iv) in the most economical and efficient methods of transport; (v) in the points of supply and demand; (vi) in the seasons, which vary for fish and for localities.

35. While learning to do this work economically and practically for Government tanks, they should be ever ready to meet all private demands for fry at cost price, so that the owners of the private tanks which cover 1,088 acres in the Tanjore district might be shown how to stock their ponds. A brief manual in the simplest terms, and with vernacular names of fish, should also be written in English and in the vernacular, teaching the people how to deal with their tanks. One such tank, dug by the villagers for their common use and fished for their common advantage, yielded, as I was informed at the time, Rs. 700 in a single fishing. Here I write from memory not notes. There is a nascent knowledge of the matter in Tanjore which claims a helping hand, and if the people soon learn to do without the Government intermediaries, and to deal directly with the cruive owners so much the better; and if they proceed to stocking other tanks also which are filled by hill-springs or by rainfall, and to taking fry by rail to other districts that are riverless and practically fishless, it is nothing more than is to be expected. Live fry have already been thus carried by rail for hundreds of miles by private enterprise, and very much more could and would be done if only a little assistance were afforded. I have been repeatedly asked to aid in this matter, but my public duties prevented it. Tanjore offers opportunities for stocking public and private reservoirs all over the face of the country with millions of fry of selected sorts of fish, rapidly producing tons of food in waters that are now practically empty. And this can be done without any outlay on appliances for artificial breeding and hatching, such as are used at great cost in England and America, it can be done, as explained in Board's Proceedings, dated 8th February 1888, No. 119, simply by using those very forces of nature and that very destructive wastefulness of man that seem to the casual observer to be both hopelessly inimical to the fish supply.

36. With such opportunities, it seems incumbent on the Government to show the people how it can be done, especially as there are indications of a nascent desire to do it as a private enterprise if they only knew how to do it.

37. The season during which the fry are running in the Tanjore district is while the artificial rivers or irrigation channels are full, namely, from July to December or January, varying with localities and sorts of fish, and as this system of stocking reservoirs, public and private, could be set on foot without legislation, it will be a thousand pities if a whole year is lost while the general subject is being ventilated. Moreover, the present interval of ventilation is a convenient interval for such action being taken before attention is demanded to considering the objections and suggestions invited, and of taking such action thereon and in applying the Act as the Government may desire. Canals too require inspection as above indicated.

38. When it is known if the principles of the Bill are accepted the details of the skeleton staff suggested in paragraph 13 of the objects and reasons can be more closely considered. Till then it would seem premature to say more than that they can doubtless be kept well within the income now derived from fisheries; and, by way of brief indicative outline, it may perhaps be added that one officer of about the rank of 4th-grade Deputy Conservator of Forests on Rs. 550 a month could probably supervise the special operations proposed in Tanjore and visit and assist Collectors in the districts of Tanjore, Trichinopoly and Coimbatore, all on the rail. These would form his chief charge, and as there is little comparatively to be done in the following districts, in some very little indeed at present, they might be thrown in, so that his charge would cover the southern railway traversed half of the Presidency, excluding the West Coast. The districts are Tinnevelly, Madura, Salem, Nilgiris, South Arcot, North Arcot, Chingleput and Madras.

39. With the northern half of the Presidency I am not so well acquainted, my service never having taken me north of Nellore, and some of those districts have not sent in any returns, so that I am not in a position to say if one or two such officers would suffice for the northern half of the Presidency. We could begin with one.

40. The West Coast would seem a simple matter that Collectors themselves could see to without any such special aid.

I have the honor to be,
Sir,
Your most obedient servant,

A. J. Thomas.

First Member, Board of Revenue.

List of Rivers in which the minimum size of mesh to be allowed above tidal limit is to be ..... inches in circumference or ..... from knot to knot.

Bellary District.

Harpanahalli Taluk.

	Tributaries.
Tungabhadra ...	Chinna Hagari: its tributary holds water 8 months. Hagari, not entered by Collector.

South Canara District.

Netrávati ...	Shisala Hole. Peranchor Hole. Nidwal Hole. Charmadi Hole. Kollad Holla. Beltangadi Hole.
Kumardhari ...	Uppar Halla. Patrame Halla. Aniur Halla. Agali Halla. Bilinele Halla. Darpana Tirtha. Kollaji Holle. Kujugod, *alias* Kote Holle. Uppakal Halla. Punjada Halla. Hossamatha Halla. Marakata Halla. Kuntur Halla.
Payashwani ...	Sarve Halla. Balenad Halla.

Kásaragód Taluk.

Shire ...	Puttige Halla. Skelai " Kavaliyar " Panage " Bajekudla " Kattakukko " Podre " Pilikudi " Balur " Talibail " Kakyatu " Perdal " Karambila " Sheni " Nellikunja "

Coimbatore District.

Cauvery ...	Bhaváni. Noel. Amarávati. Gundal. Ooduthorai. Pálár, *alias* Hombathu nagara. Moyar. Thattapallam. Kallamballampallum. Sithar.

Coimbatore District—*continued.*

	Tributaries.
Cauvery ...	Kunda river. Kalár. Coonoor river. Siruwáni. Sigúr river. Sarabunganadi.

Godavari District.

Godávari ...	Goutami. Vynateyam. Vasésta. Sovari. Sokilaru. Selaru.

Colair Lake partly private.

Kurnool District.

Tungabhadra ...	.....
Kistna ...	Bavanasi. Kunda tributary of Pennér. Saggaler.
Gundlakamma ...	Jampaleru. Uppavagu. Tigaleru. Duvaleru. Kandleru. Kanagalavagu. Rallavagu. Pedda Rallavagu. Pedda Kandleru.

Kistna District.

Kistna.

Nellore District.

Pennér.

Malabar District.

Ponáni river ...	.....
Conolly's canal ...	.....
Baliapatam ...	Chirikantapuram puya. Eruvashi puya. Chathuram puya.
Iritti river ...	Uritti. Bavali. Kanjira puzha.
Cubbani ... Pannamaram ... Noogoo ... Sholady ... Periya ... Terriote ... Noolpoya ...	Rise in forests and flow into Mysore. No use for *us* to do anything except to help Mysore if she joins *us*.
Challiaur or Nilambúr river ...	Challiar. Karim puzha. Kalakam puzha. Karuvam Tirutu.

List of Estuaries in which the minimum size of mesh to be allowed is to be.....inches in circumference or.....from knot to knot.

South Arcot District.

Vellár	Enters sea at Porto Novo.
Manimukta	Do. do.
Pennér	Enters sea at Cuddalore.
Gadilam	Do. do.

South Canara District.

Estuaries entering the sea—

At Coondapoor.	At Cumbla.
Near Bárkúr	At Kásaragód.
Do. Udipi.	Near Caut cutcherry.
At Mulky	

Chingleput District.

Saidápet Taluk.

Adyar ... ... Also in Madras.

Chingleput Taluk.

Pálár.

Godavari District.

Godávari.	Upputeru.

Nellore District.

Maneru.	Gundlakamma.
Pakeru.	Pulicat Lake.
Musi.	
The canal and all the rivers and estuaries running into it.	

Kistna District.

Kistna.	Upputeru.

Tinnevelly District.

Támbraparni.	Vaippar.

Malabar District.

The canal and all the rivers running into it.

Tanjore District.

Tirumalavasal Uppanaru.	Vellayaru entering the sea at Velangauni.
Kodayampalayam Uppanaru.	Addapparu entering the sea at Toputhurai.
Virakolanaru and Nandalar united at Tranquebar.	Koreiyaru entering the sea at Mutupet.
Vettaru entering the sea at Nagur.	

List of Government Tanks which are fed by river channels and never run dry, in which the minimum size of mesh to be allowed is to be.....inches in circumference or .....from knot to knot.

	Area. When full.	Area. When lowest.
South Arcot district—		
Vriddháchalam taluk—	acs.	acs.
Vriddháchalam	198·	6·60
Sathukudal	264·	13·20
Kargudal	213·	68·
Kumaramangalam	162·3	39·60
Kammapuram	217·10	72·
Cuddaloro taluk—		
Perumal	1,300·	200·
Kondangi	188·	70·
Tirukoilúr taluk—		
Velandai	237·60	132·
Chingleput district—		
Saidápet taluk—		
Chembrambakam	7,680·	1,360·
Ponnéri taluk—		
Sholaveram	1,636·66	....
Chingleput taluk—		
Kalavary	600·	10·
Coimbatore district—		
Satyamangalam taluk—		
Ananthashegaram	150·	100·
Godávari district—		
Cocanada	10·	8·
Kurnool district—		
Nandikótkur taluk—		
Nagatoor yerra	100·	50·
Tungidancha	300·	150·
Mallala	200·	100·
Madigatla	200·	100·
Pagidala	200·	100·

List of Government tanks, &c.—*continued.*

	Acres. When full.	Acres. When lowest.
	Acs.	Acs.
Cumbum taluk—		
Cumbum	...	4,034·29
Kanchipalli	...	176·29
Márkápur taluk—		
Konnaya	150·	70·
Madura district—		
Madura taluk—		
Kistna Row's Teppakulam		
Salem district—		
Tiruchengód taluk—		
Vellalapuram		
Senguttai	2·36	2·36
Avaniperur	300·	100·
Idapodi	50·	15·
Arasiramanimolai anicut	300·	100·
Vembaneri	200·	100·
Ammaleri	130·	40·
Bommasamudram	300·	100·
Arasankutai	60·	10·
Maganeri	30·	10·
Chinna eri	48·	10·
Kundiampatheri	25·	10·
Krishnagiri tank—		
Barúr project taluk	100·	30·
Trichinopoly district—		
Trichinopoly taluk—		
Beerangi	661·	35·
Banbury	·82	·82
Whiteside	·71	·71
Keekulam	·89	·89
Tanjore district—	1·52	1·52
Shiyáli taluk—		
Shiyáli Mudaliar	1·	1·
Kaivilangeri road	1·83	1·83
Velandidal Samuthiram	1·	1·
Arasur	1·27	1·27
Sothiyakudi	1·17	1·
Kunnam	6·	6·
Athiyur	1·32	1·32
Velur Veten	1·35	1·
Sivayi Kilamai mattam	2·20	1·80
Do. Melaveedi Vaddam boki	1·32	1·
Karkovil road	3·03	2·
Toludur	3·50	1·75
Tirupangur	5·	3·
Korai medu	1·52	2·75
Tiruvangadu Mariyamman	1·50	1·
Tirukattapalu Avaiyar	3·	1·
Do. Avai medu	10·85	1·
Keelanangur Tirupakadal	3·30	1·66
Keelaiyar Satharathan		1·39
Tanjore taluk—		
Ammapanpetti Aiyanar kulam	1·70	
Nilattur Melá tank	2·25	1·30
Do. Vadaku kulam	3·60	1·50
Do. Sivan Kovil tank	3·63	3·
Do. Duropadaiyamman	2·	5·
Titai Mela tank	3·	1·50
Poondi chattram tank	2·70	1·50
Saliyamangalam Permal Kovil tank	5·63	2·20
Do. Tamara kulam	9·94	3·
Neduvasal Depaboyi Pillaiyar	4·69	6·
		3·50

List of Government tanks, &c.—*continued.*

	Acres. When full.	Acres. When lowest.
	Acs.	Acs.
Mannárgudi taluk—		
Tiruvapal tank	1·	1·
Aiyanur do.	2·	1·50
Peria Pullivapal kulam	1·73	1·73
Thambi kulam	1·30	1·
Thamarai kulam	2·	1·75
Melandan gulam	5·	4·
Vettu kulam	2·	1·50
Aiyanur kulam	1·	1·
Pallacheri kulam	1·	1·
Mandapathadi kulam	1·60	1·50
Aiyanur kulam	1·54	1·40
Tiruvapal kulam	1·75	1·70
Edanjan kulam	1·70	1·70
Andi kulam	1·35	1·10
Udaiyanur kulam	1·35	1·
Ambalavanan kulam	1·58	1·30
Perumalkovildadi kulam	3·60	2·60
Peria kulam	1·70	1·
Pullia kulam	1·10	1·
Kunandarsivami Tiru kulam	2·	2·
Sivankovil kulam	1·25	1·
Savadi kulam	1·96	1·50
Thengaravayal Sivadi kulam	1·76	1·50
Mariamman kulam	1·50	1·
Aiyaranur kulam	1·55	1·10
Singarnarkovil kulam	1·60	1·10
Applachari kulam	1·20	1·
Tiruvapal kulam	1·45	1·
Vellappillayarkovil kulam	1·50	1·
Kamachi kulam	3·99	3·60
Appan kulam	7·90	6·
Rengiyan kulam	2·30	2·
Aiyan kulam	12·70	10·70
Thiruthanan gulam	1·	1·
Narasimhan kulam	1·50	1·40
Sannathi kulam	4·63	4·
Pappa kulam	3·56	3·
Iswarmi kulam	1·24	1·
Maravathi kulam	2·43	2·
Kari kulam	2·65	2·
Thevar kulam	1·60	1·
Thathan kulam	2·38	2·
Kasinathan kulam	1·50	1·
Aiyanur kulam	1·63	1·
Pillayar kulam	1·90	1·50
Agraharam tank	1·60	1·20
Thoppadi kulam	3·09	3·
Arugan gulam	3·31	3·
Muthan kulam	2·	1·50
Aiyanaur kulam	1·50	1·
Tiruvapal kulam	1·23	1·
Mulu kulam	1·98	1·78
Srikalasubramaniaswami kulam	1·44	1·20
Mariammankovil kulam	1·50	1·
Amman kulam	1·29	1·20
Aiyanarkovil tank	1·60	1·
Sudrateru kulam	1·46	1·25
Pallivapal kulam	350·53	150·25
Srikothandaramaswami eri	3·17	3·50
Pakkupettai Theru kulam	2·45	2·15
Paratheru kulam	1·50	1·
Mullan kuttai	3·12	2·80
Sen gulam	6·50	4·50
Gopralayam		

List of Government tanks, &c.—*continued.*

	Area. When full.	Area. When lowest.
	Acs.	Acs.
Tiruturaipundi taluk—		
Mutharasapurum tank		
Tholudur tank	1·76	1·
Kornal tank	3·	2·
Malamaruthur tank	1·50	1·
Punathore tank	3·50	3·
Kulayammanur tank	1·50	1·20
Auyur tank	1·20	1·
Tiruthungure tank	1·59	1·
Kunnur tank	3·	1·50
Negapatam taluk—		
Thamarai kulam ...	2·	1·50
Aurumugachetti kulam	3·30	2·60
Madantha Mudali kulam, Nagorivattam	2·	1·70
Agrahara kulam	1·60	1·
Pidaran kulam	1·58	1·19
Thamarai kulam	1·41	1·06
Doonkulam kulam	2·23	1·67
Pallivasal kulam	2·51	2·
Pidarikulam kulam	1·91	1·50
Chutram kulam	1·51	1·30
Thamari kulam	1·27	1·
Ackarai kulam	13·40	13·
Vaman kulam	11·18	11·
Kollan kulam	5·20	11·
Kampan kulam	1·32	1·
Esvarancoral kulam	2·02	1·50
Pinnai kulam	2·08	2·30
Thamarai kulam	1·70	1·50
Peria kulam	5·26	5·
Thunvasal kulam	1·74	1·50
Iyanar kulam	1 50	1·20
Sannady kulam	1·93	1·40
Do. kulam	1·15	1·
Vura kulam Kuthuasivayanur	4·39	4·
Agrahara kulam Silur	1·58	1·30
Samathi kulam	1·15	1·
Iyanar kulam	4·90	3·
Villian kulam	1·33	1·
Karapudian kulam	2·20	1·90
Thiru kulam	1·97	1·60
Thirulvasal kulam, Kadansengrur	1·31	1·00
Pidan kulam	3·03	1·03
Keilkudi kulam	1·81	1·40
Rathamangalam Sivankoil kulam	1·25	1·
Arasany kulam	1·65	1·40
Agarakuvambur kulam	12·94	6·47
Pala kulam	2·41	1·20
Amrul kulam	5·80	4·35
Mudali kulam	3·38	2·10
Gumsetti kulam	1·87	1·30
Snana kulam	2·18	1·10
Perumal kulam	1·80	1·50
Esvaraikoil kulam	2·27	1·12
Sivainur Peria kulam	3·75	3·
Agrahena kulam	2·	1·
Easvaram Samettu kulam	1·15	1·
Agrahara kulam	2·	1·60
Iyanai kulam	2·44	2·
Pillathiru kulam	2·19	1·05
Puleverum Perumal kulam	1·35	1·20
Reddi kulam	3·62	3·
Kariangudi Sillai kulam	4·	3·
Snani kulam	1·38	1·
	2·50	1·33

List of Government tanks, &c.—*continued.*

	Area. When full.	Area. When lowest.
	Acs.	Acs.
Negapatam taluk—*continued.*		
Perumal kulam	2·86	2·14
Pulari kulam	3·41	2·30
Isva Raukovil kulam	1·47	1·14
Manarman kulam	1·40	1·04
Mayavaram taluk—		
Aiyanar kulam	1·10	1·10
Kumarakatlai Sooama poygai	3·42	3·42
Patham Agraharam kulam	1·24	1·
Agraharam kulam	2·	1·50
Perumal kulam	3·64	3·64
Iswaran, kulam	2·67	2·36
Melluchery Peria kulam	1·92	1·92
Iswarankoil kulam	1·25	1·40
Munnuvanagudikoil kulam	1·03	1·03
Aharahariharandudal kulam	2·27	2·27
Sathannur Pillayarkoil kulam	1·16	1·16
Chidumbarumkoilputhur Resta kulam	1·05	1·05
Ayappadyswami kulam	1·	1·
Padayurswami kulam	1·	1·
Olagunathun kulam	1·25	1·25
Anai kulam	4·32	4·
Vella kulam	1·88	1·50
Menjan kulam	1·24	1·
Kanjannaikan kulam	1·21	1·21
Subbaraya Pillai Chanady kulam	3·37	3·37
Anandamangalam Mila kulam	1·20	1·20
Kila kulam	1·61	1·61
Amman kulam	2·63	2·63
Thawarai kulam	4·23	3·
Perumalkoli kulam	1·71	1·20
Manmalaiswana kulam	2·25	2·
Swana kulam	1·86	1·40
Vettiyan kulam	1·35	1·
Pundaravady Chatram kulam	1·41	1·20
Kuli kulam	1·40	1·
Puthun Thamarai kulam	3·84	2·80
Kuravanduvadapuram Chavady kulam	1·60	1·20
Inama kuttai	1·74	1·40
Melapidary kulam	1·37	1·
Iswarankoil kulam	1·28	1·28
Aiyan kulam	3·10	3·10
Snana kulam	2·88	2·88
Thamari kulam	2·15	2·15
Manthai kulam	1·20	1·20
Snana kulam	1·69	1·69
Chetty kulam	1·30	1·20
Kasanttathaiswana kulam	1·20	1·20
Kadali Snana kulam	1·10	1·10
Snana kulam	1·73	1·73
Mummayampuram Snana kulam	1·36	1·36
Snana kulam	2·70	2·70
Do. kulam	2·64	2·64
Thiru kulam	2·44	2·44
Perumalkoil kulam	1·20	1·
Iswarankoil kulam	1·95	1·75
Pidari kulam	2·25	1·50
Snana kulam	1·31	1·
Olayamuthur kulam	1·21	1·
Inam Melaputtai kulam	1·36	1·
Rasthachavady kulam	1·50	1·
Ahara kulam	2·	1·
Tinnevelly district—		
Tenkarai taluk—		
Peran kulam	672·63	160·
Kadamba	1,640·91	50·

List of Government tanks, &c —*continued.*

	Area. When full.	Area. When lowest.
Tenkási taluk—		
Annamalai Poigai in Kadayanallur	ACS. 2·75	ACS. 2·
Sangilimudankoil in Vadakarai Kilpidagai ...	6·61	2·
Nellore district—		
Nellore taluk—		
Kanigiri tank		
Duvoor	8,000·	4,000·
Gúdúr taluk—		
Sarvepalli	1,900·	950·
Idugalli		
Ponniampuram	3,352·	800·
Kathuvarayaur	1,017·14	100·
Do. Chinna	558·72	40·
Pidalapolur Kokarayapudi	33·88	5·
Brahmadevam	105·	10·
Vallur	209·74	10·
Tallipudi	348·81	50·
Murrapalli madugu	392·25	30·
Vukudu yerra	59·54	10·
Kota Venaka	147·42	100·
... ...	153·09	20·
... ...	1,953·27	800·
	37,658·26	15,122·99

List of Government tanks reserved for drinking purposes.

	Area. When full.	Area. When lowest.
Tanjore district—		
Mannárgudi taluk—		
Tiruvasal kulam	ACS. 3·17	ACS. 3·
Nallathu	1·50	1·
Kunandarswami Tiru kulam	1·10	1·
Perumalkovil tank	3·	2·50
Sith eri	1·81	1·81
Narasimhan kulam	1·54	1·30
Aiyanar kulam	1·25	1·
Pallachiri kulam	2·63	2·50
Marimutha Pillai kulam	1·20	1·10
South Arcot district—		
Vriddháchalam taluk—		
Kummapuram	6·	3·
Cuddalore Taluk—		
Tirupanambakam	6·	5·
Chingleput district—	29·20	23·21
Saidápet taluk—		
Red Hills reservoir	Unknown.	

List of Private Tanks that are river-fed and never run dry and which may be benefited.

	Area. When full.	Area. When lowest.
Godávari district—		
Cocanada taluk—		
Sila	ACS. 3·	ACS. 2·
Manjaru	2·	2·
Kapulapalem	1·50	1·
Yinjaram	2·	2·
Vuppangala	2·	2·
Karakuduru	1·50	1·
Sarpavaram	3·50	3·
Suriyaraopetta	16·	12·
Nilapalli	3·	2·
Venkatakrishnarayapuram	2·	1·50
Penuguduru	2·	1·50

List of Private tanks, &c.—*continued.*

	Area. When full.	Area. When lowest.
Kurnool district—	ACS.	ACS.
Markapur taluk—		
Chinnaladina	200·	100·
Madura district—		
Madura taluk—		
Vandiyar Tippa kulam	48·	48·
Trichinopoly district—		
Udayárpálaiyam taluk—		
Perumal kulam	4·	1·
Tiru kulam	2·63	2·
Trichinopoly taluk—		
Fort Teppu kulam	5·16	5·16
Tiruvanaikovil Teppu kulam	2·84	2·84
Srirangam Teppu kulam	5·84	5·84
Kulitalai taluk—		
Eswaran kovil tank	·75	·75
Vaiganalur Teppu kulam	1·47	1·47
Udayárpálaiyam taluk—		
Perumal kulam in Vakkaramari village ...	4·	1·
Tiru kulam in Kodalikaruppur village	2·63	2·
Tanjore district—		
Shiyáli taluk—		
Tadalankovil	1·80	1·80
Do.	1·10	1·10
Puthur	1·12	·80
Kilanundur Indra Pushkarani	1·13	1·
Nannilam taluk—		
Nannilam Shakara kulam	6·	4·
Do. Appar kulam	3·15	2·
Do. Vanian kulam	2·	1·40
Tirukandishwaram poygai	3·39	1·80
Thennaiyar Viraividugira	1·90	1·
Shrivanjiam Muli thirtham	1·60	1·60
Do. Sarva thirtham	1·38	1·
Do. Ramachakra thirtham	1·49	1·30
Merkamangalam Ishwarankovil	1·27	1·
Vadagudi Marudan kulam	2·28	1·08
Kambankudi Aiyanar	2·13	1·50
Nallamankudi Somasi kulam	4·20	3·30
Suthangaram Aiyanar	1·50	1·10
Athalaiyar Andal	1·92	1·65
Karaimarkam Appan	1·80	1·33
Kottur Thamara	3·22	1·
Kuthanur Sarasvathiramman	3·36	3·
Mavundakudi Ishwarankovil	1·17	1·
Marudavanjeri Salai	1·14	1·
Do. Ishwaran	6·50	5·
Alankudi Aiyanar	2·40	1·66
Thuthukudi Ishwarankovil	2·53	1·
Seravalur Utharigangai	2·30	1·80
Kothavasal Ishwarankovil	1·26	1·09
Kovilthirumalam Sannadi	2·	2·
Do. Sokkapuram Modathu	2·	1·50
Andakudi Anumar	2·	1·
Ambal Alaya Pillaiar	1·60	1·58
Uppayavedantapuram Perumal kulam	2·97	2·77
Aramulithevan Pidari	2·99	2·65
Apisheka Kottalai Thiru kulam	2·	1·30
Kuruvadi Chattram	2·	1·
Athinarkudi therka	1·26	1·07
Do. thawara	1·87	1·66
Thirukannapuram Theru kulam	4·33	4·
Do. Thirumanjana	1·28	1·

List of Private tanks, &c.—*continued.*

	Area. When full.	Area. When lowest.
	ACS.	ACS.
Nannilam taluk—*continued.*		
Mangudi Chattram	1·50	1·50
Do. Therku kulam	3·	2·50
Kayathur Agrahara	1·70	1·50
Thirupugalur Thiru kulam	4·19	3·
Do. Maniyakaram	1·87	1·30
Thottakudi Tharampara kulam	1·90	1·30
Parakramam Rajathiru kulam	1·28	1·20
Thittacheri Thenkal	1·16	1·
Konthagai Palli	1·12	1·
Do. Kovilpattur Periyar	1·85	1·66
Agarakonthagai Perumalkovil	1·30	1·
Do. Mangalam	1·41	1·
Panangatur Periya kulam	4·93	4·
Sannasi Panangudi Kila kulam	2·50	2·
Vallapakam Killa kulam	2·	1·50
Warimanam Ishwarankovil	1·63	1·50
Visalur Aiyangar Thiruvasal	1·31	1·12
Sorakudi Snana kulam	1·48	1·
Kakkakottur Snana kulam	1·80	1·49
Ravanthimangalam Perumalkovil	2·52	2·19
Do. Snana kulam	1·36	1·
Andipanthal Snana kulam	1·85	1·25
Vallakudi Snana kulam	1·35	1·20
Puthanur Arasan kulam	1·95	1·
Marangar Adapan	2·	1·10
Kudavasal Melkandam chattram	1·75	1·33
Do. Piddari kulam	3·20	1·34
Do. Vella kulam	1 73	1·30
Do. Karangulaur	4·90	1 70
Do. Erruka	1·40	1·
Do. Agrahara	3·	2·
Sithadi Perumal	2·24	1·68
Do. Iswaran	1·22	1·22
Do. Chetti	1·32	1·32
Thukkacheri Agrahara	2·	1·
Kappanamangalam Mela kulam	4·	3·
Weikuppai Selapan	1·44	1·
Kilapillaiyar Agraharam	4·	3·
Arasar Snana kulam	2·25	2·25
Do. do.	1·20	1·20
Agara Ogai Perumalkovil	3·	2·
Sengalipuram Keli kulam	6·32	4·97
Do. Perumalkovil	6·30	4·92
Annavasal Ishwarankovil	3·	3·
Weranamangalam Nannai	2·	1·80
Pulichakadi Waga kulam	1·13	1·
Parathiyar Ishwarankovil	3·70	3·46
Iniyanallur Pillaiyarkovil	2·20	2·
Pungalam Thamara kulam	2·12	2·12
Vithi Vidargan Thiru kulam	2·	1·50
Muthathimalai Perumalkovil	2·33	2·33
Kirangudi Marriammankovil	2·13	1·30
Thivangudi Thiruvasal	1·09	1·09
Do. Agraharam	1·09	1·09
Thotiagudi Aiyan kulam	2·66	2·48
Arasavanagadu Nela kulam	1·66	1·26
Do. Kela kulam	3·24	2·24
Thalayalangollu Periya	1·44	1·
Sanmangudi	2·	1·50
Perumaniyur Snana	2·58	2·
Simili Ishwaran	3·85	2·85
Thethiyar Periya kulam	2·59	1·25
Vikrapandian Snana kulam	2·20	1·

List of Private tanks, &c.—*continued.*

	Area. When full.	Area. When lowest.
	ACS.	ACS.
Nannilam taluk—*continued.*		
Aravili Mangalam Tamara	6·13	6·13
Do. Kailasanathasami	1·53	1·53
Puvambur Kila kulam	1·32	1·
Kundramanikam Agraharam	4·56	4·30
Do. Thiruvasal	1·33	1·15
Valkai Varnaa	2·83	2·83
Do. Thiruvasal	1·81	1 81
Do. Mel kulam	1·33	1·33
Do. Thiruvasal	1·92	1 92
Achadamangalam Vethu kulam	2·06	1·80
Do. Melathamara	5·77	4·90
Thirakulambar Thiru kulam	1·	1·
Uthirangudi Snana kulam	3·40	2·
Kumarangalan Snana kulam	1·81	1·40
Valavanallur Orupadi	1·15	1·
Pathur Thamara	4·	3·
Asukanodai Snana	1·51	1·51
Do. Arasamangalam	1·	1·
Thirukodai Snana	1·54	2·
Sithanvelur Thiru kulam	3·	3·
Perumalagaram Mela kulam	4·	1·50
Varadarajan Kotagam	2·	1·
Maukudi Mela kulam	2·	3·
Koradacheri Mela kulam	4·	1·40
Attukadai Pallikeni	1·40	1·06
Kodimangalam Theruvadi	1·40	1 50
Urkudi	2·	1·
Do. Theruvasal	1·50	2·
Arpar Mela kulam	3·	1·07
Perlam Theru kulam	1·40	1·
Sithambar Snana	1·23	1 32
Kovinthacheri Mela kulam	1·75	1·15
Thirumichiyar Snana	1·61	1·32
Do. Visuvanatha	1·74	1 66
Do. Viraividugira	4·17	2·
Athur Kerudankovil	2·	1·
Do. Perumalkovil	2·48	1·
Kaduvangudi Kailasanader Tharuman	1·40	1·60
Panayatengudi Viraividugira	1·60	1·35
Kilakavangudi Kila	1·35	1·31
Agaranada Kudi Viraividugira	1·31	6·
Pillur Snana	6·	1·
Mangudi Kattalai Thirtha	1·	1·80
Karkalai Snana	1·80	1·42
Kiranur Sanadi	1·76	3·31
Do. Ammasi	4·70	2·50
Sirupuliyur Thiruvananda	3·	1 50
Pavatakudi Agraharam	2·	2·
Do. Mandapathadi	3·	1·
Palaiyar Savadi	1·50	2·65
Kaliakudi Mela kulam	2·65	1·32
Thirukottaram Thiruvasal	1·63	2·32
Thenkaraimathurperia	2·98	2·
Kollapuram Iswararkovil	3·	1·
Nadukanthangudi Vadaka	1·50	2·
Kadakkam Petta kulam	3	2·
Kurankulom Mela kulam	3·	1·
Sarbojirajapuram Amma	1·09	2·50
Tiruvalimalalai Sanada	2·50	2·
Palavakkarai Melakulam	3·50	1·10
Vaiyalur Shivankovil	1·30	1·05
Vadamattam Setti kulam	1·13	2·20
Do. Pidari	2·33	1·03
Annaiyur Thamarai	4·13	2·
Thular Sannathi	2·12	1·
Sembiavur Sirubakampidakai Thiru kulam ...	1·22	5

List of Private tanks, &c.—*continued.*

	Area. When full.	Area. When lowest.
Nannilam taluk—*continued.*	Acs.	Acs.
Thirupambaram Pidarikovil	2·15	1·32
Suraikayur Mela kulam	3·	2·
Polakupi Thirumagnanam	3·	2·
Do. Agrahara	3·	2·
Kulliyar Snana	3·	2·
Tirukanarmengai Sannadi	3·61	2·
Vadakandan Thamara	2·	2·
Manakai Thiruk kulam	2·	1·50
Do. Periyathamarai	1·63	1·63
Kothangudi Aiyannar	3·10	3·10
Vandampalai Snana	2·03	2·03
Agarathirunallur Aiyyan	1·08	1·08
Ammayappair Kadai	1·69	1·69
Thenkal Kundaramkristna	1·32	1·
Elangudi Pattunichetti	1·40	1·
Do. Sakadi	1·66	1·29
Eukan Velagan	1·50	1·33
Do. Thiruvasal	1·05	1·05
Do. Thamara	1·32	1·32
Atti Sholamangalam Snana	1·40	1·40
Attakudi Piddari	1·37	1·
Perinthikadi Viraividugira	1·30	1·25
Melumpalam Nathavidugira	1·32	1·16
Velakkudi Thiruvasal	1·70	1·49
Pattukotai taluk—	1·20	1·
Thiruvasal Periya kulam		
Sakkianam	2·50	1·
Thiruvasal	5·	2·
Periya kulam	2·	1·
Kumbakónam taluk—	2·	1·
Kumbakónam Mahamaiya		
Do. Ayi	17·	17·
Ammashatra	2·	2·
Teppuramalnallur	4·	4·
Kapistalam	7·	7·
Alangudi	2·	2·
Haridwaramangalam	2·	2·
Udayalur	2·	2·
Dharasuram	2·	2·
Pavundarikapuram	3·	3·
Marathurai	3·	3·
Thirupanandal	4·	4·
Tanjore taluk—	5·	5·
Ukkaditamarai kulam	4·	4·
Do. Naga kulam	1·20	1·
Do. Neduvasal Kuppusetti	1·45	1·
Do. Arumdaselasmeraswami tank	2·27	1·60
Do. Elattuppettai tank	2·37	1·80
Do. Paruttai Settu tank	1·70	1·
Do. Nadamantapam Pillayar	1·36	1·
Do. Virappasattu	2·20	1·80
Kummenjeri Peraruyam tank	4·10	3·
Kamugunsenthangudi tank	1·38	1·
Kilakovilputtu Tiru kulam	1·78	1·20
Dipamhalpuram Sannadi kulam	10·32	10·32
Do. Agrahara kulam	2·90	2·
Mannárgudi taluk—	2·20	1·75
Tiruppakkadal	3·94	3·
Nallathaneir kulam	1·55	1·20
Gori kulam	1·45	1·30
Sanjur Royankovil kulam	1·78	1·60

List of Private tanks, &c.—*continued.*

	Area. When full.	Area. When lowest.
Mannárgudi taluk—*continued.*	Acs.	Acs.
Serriathegu Madatha kulam	1·50	1·10
Gopinathan kulam	7·50	7·
Aiyaur kulam	7·	6·50
Meenakshiammankovil kulam	2·	1·50
Pillayar kulam	3·	2·50
Periya kulam	3·	3·
Etumichankolla kulam	2·	2·
Sanan kulam	1·	1·
Thoppadi kulam	1·	2·
Vilavadi kulam	2·	27·05
Harithranattu	23·10	2·
Krishnanhirtham	2·03	3·50
Rukmani kulam	3·63	3·
Jeeyar kulam	3·78	10·05
Thamaraijkulam	11·44	2·17
Pethaperumalkovil kulam	2·97	2·65
Gajenthramoksham	2·81	
Tirupuraipudi taluk—	3·50	3·
Tiruturaipundi tank		
Negapatam taluk—	1·32	1·
Thiruvasal kulam	2·25	1·55
Kailasanathaswamykovil kulam	1·68	1·12
Esvarancovil kulam	3·92	1·35
Kovil kulam	2·11	1·06
Kovilkannapur kulam	1·71	1·
Naranamangalam Pillaiar kulam	18·08	17·
Kamalalayam tank	4·45	4·
Valantha kulam	1·35	1·20
Theppathurunal kulam	1·04	1·
Madapuram Vanien kulam	1·60	1·30
Vilvarayan kulam	1·17	1·
Salackarythumottai kulam	1·70	1·
Máyavaram taluk—	3·	2·
Pudayachi tank	1·64	1·64
Do. tank	2·57	1·30
Adiyan tank	3·35	2·42
Ambala tank	1·28	1·
Anaiurutti tank	1·72	1·
Pichanadi tank	3·13	2·30
Samithi tank	3·58	3·
Akkulur tank	3·15	2·
Akkanan kulam	1·16	1·
Chetty tank	1·84	1·
Chutram kulam	2·02	1·50
Isinaran kulam	1·91	1·
Iswarankoil kulam	1·92	1·
Mulappakam Vadakku kulam	2·30	1·50
Mattai kulam	2·20	1·20
Terady kulam	1·42	1·
Tiru kulam	4·75	4·
Do. kulam (bathing tank)	2·30	2·
Tamarai kulam	2·	1·
Poyya kulam	1·50	1·90
Killa kulam	2·33	2·15
Urgudimela kulam	2·61	5·15
Agraharam kulam	6·26	1·86
Do. kulam	2·48	1·
Tamarai kulam	3·57	1·40
Meenan kulam	1·60	1·20
Rajan kulam	1·33	1·30
Kannan kulam	1·39	
Santhaneli kulam		
Chetty kulam		

List of Private tanks, &c.—*continued.*

	Area. When full.	Area. When lowest.
Máyavaram taluk—*continued.*	Acs.	Acs.
Poojai kulam	1·48	1·08
Amma kulam	2·70	2 05
Elangarakudi kulam	2·22	2 02
Anai kulam	2·50	2·20
Iswarankoilsiru kulam	1·40	1·20
Mahisham kulam	1·67	1·45
Aiyanar kulam	2·31	2·20
Kadukadappai kulam	4·70	4·60
Petha kulam	1·18	1·
Mariyameramkoil kulam	1·77	1·10
Sannidhi kulam	1·58	1·
Sannithi kulam	2·60	1·90
Perumal kulam	1·80	1·20
Konerirajapuram	9·	6·
Melaparuthikudi	1·46	1·08
Kilaparuthikudi	1·90	1·60
Manthai	2·40	2·
Sivankoil kulam	3·	1·50
Melachanadipulam	1·94	1·30
Pillayar kulam	2·50	2·
Porambore	3·50	3·
Kilakulam	2·40	2·
Aiyanar kulam	1·53	1·30
Periya kulam	3·37	2·
Sengudi kulam	1·85	1·45
Murukkanthossam kulam	2·02	1·80
Selaikarai kulam	1·75	1·20
Melaikudi kulam	2·10	1·80
Pidari kulam	2·	1·00
Mela kulam	1·07	1·
Kila kulam	1·15	1·
Valaranagakuppam Killa kulam	1·03	1·
Sundarapparmchavady kulam	1·60	1·
Kylasanathaswami kulam	1·57	1·
Mikuppeiattai kulam	3·04	2·
Vala kulam	1·12	1·
Yelandangudychatram kulam	2·95	2·
Peria kulam	3·57	2·17
Onea kulam	2·10	1·70
Iswarankoil	1·05	1·05
Mela kulam	2·86	2·50
Palayurmela kulam	1·40	1·
Karuppur kulam	1·76	1·02
Mela kulam	2·25	1·10
Aiyanarkoil kulam	1·15	1·15
Chetty kulam	1·57	1·
Snana kulam	1·68	1·48
Tharwarai kulam	4·55	2·80
Chatram kulam	1·30	1·
Snana kulam	2·38	2·18
Elayangudisnana kulam	1·86	1·70
Snana kulam	15·50	15·50
Do. kulam	3·41	3·41
Nagangudi kulam	2·02	2·02
Sholachatranattur kulam	4·05	4·05
Snana kulam	6·10	6·10
Do. kulam	4·54	4·54
Panampulli kulam	1·72	1·72
Snana kulam	2·53	2·40
Peramal kulam	1·44	1·30
Kolikuthisnana kulam	3·58	3·30
Thirumeniyar kulam	2·33	1·80
Iswarancoil kulam	3·09	2·80
Pidari kulam	2·12	1·90
Samanangulum	1·52	1·

List of Private tanks, &c.—*continued.*

	Area. When full.	Area. When lowest.
	Acs.	Acs.
Máyavaram taluk—*continued.*		
Pappa kulam	2·73	2·
Ichan kulam	2·24	1·50
Aiyanar kulam	1·40	1·10
Do. kulam	1·25	1·
Anjaranathalaipillayar kulam	1·48	1·
Gnagna kulam	1·50	1·
Oma kulam	3·20	2·20
Mela kulam	1·17	1·
Snana kulam	10·93	8·93
Puthaharamsnana kulam	2·	1·50
Snana kulam	4·03	4·03
Varagada kulam	3·05	3·05
Kallikadu kulam	3·15	3·15
Mellanallur kulam	3·53	3·53
Periya kulam	3·37	3·37
Manathiosal kulam	2·04	2·04
Parithikudisnana kulam	1·52	1·52
Puthagaramsanthi kulam	2·	2·
Thulukkathim kulam	1·35	1·
Odai kulam	5·79	4·
Sandaveli kulam	3·90	2·50
Periya kulam	3·10	2·
Semman kulam	1·29	1·
Araya kulam	2·89	2·
Nellore district—		
Gúdúr taluk—		
Manabola	907·62	50·
Pidurbangar	69·88	10·
Do. Paleru	259·38	20·
Pidur	178·77	30·
Mollur	300·	50·
	3,013·26	1,153·03

—	Public. When full.	Public. When low.	Private. When full.	Private. When low.
Tanjore district—				
Kumbakónam taluk	..	..	55·	12
Nannilam do.	..	..	546·04	468
Shiyáli do.	44·02	42	7·15	9
Mannárgudi do.	328·74	178	85·38	·27
Tiruturaipúndi do.	17·50	16	3·	1
Tanjore do.	43·98	44	30·27	17
Negapatam do.	184·58	197	55·15	45
Máyavaram do.	149·50	191	309·50	269
	768·32	668	1,088·49	848
	..	..	768·32	668
Total of all tanks in Tanjore	..	..	1,856·81	1,516

Acs.		Sq. mls.	Acs.		Sq. mls.
768·32		= 1·2	668		= 1·0
1,088·49		= 1·7	848		= 1·3
1,856·81		2·9	1,516		= 2·3

—	When full.	When low.	When full.	When low.
	Acs.	Acs.	Sq. mls.	Sq. mls.
Public tanks	37,658	15,122	= 58·8	23·6
Private do.	3,013	1,153	= 4·7	1·8
Bathing do.	29	23	..	..
Total	40,700	16,298	= 63·5	25·4

OBJECTS AND REASONS.

1. Fish being regarded as *ferœ naturæ* rights of property in fisheries, whether of Government or of private individuals, cannot be maintained except by special legislation. This security the Bill gives, sections 16, 17 and 21, clause *(a)*, affording to the private owner the same protection as it does to Government.

2. This establishment of right is necessarily the first step towards the possibility of improvement of the property, be it public or private, and the Government fisheries thus become a public property in food, which has hitherto been neglected, but which is by the Bill now rendered capable of being greatly increased for the benefit of the people, and this improvement of a valuable public property, in the interests of the public, is the spirit which animates the Bill; the realization of a revenue from fisheries being held subsidiary to the attainment of the primary object and only necessary as supplying the means of achieving it. If hereafter the public revenues obtained from fisheries become material, relieving taxation in other directions by perhaps some 10 or 15 lakhs a year, as Lower Burmah now does by 12 lakhs, it will not be by [illegible] any people poorer than they now are, but from the surplus wealth created by improvement of the fisheries.

3. In the same way owners of private rights in fisheries will find that their rights are not only respected but also protected, and afforded possibility of improvement short only of the point where they trespass on the rights of others. This point being frequently misunderstood for want of knowledge of the nature of the right and of the property dealt with, a somewhat lengthy explanation seems necessary. Properly understood, private owners will benefit by the slight restrictions and contributions placed on them quite as much as the public will.

4. It is well known that salmon are migratory, and the fact being admitted, English law for their protection is based on their migratory habit. It is not, perhaps, so well known that almost every Indian fresh-water fish is also migratory, and that consequently laws for their protection should be based on the same principle. This migratory habit, and its tropical necessity has, however, been demonstrated in the explanation that accompanied the draft Bill for 1883, has been further explained in "Tank Angling in India," and quoted by extract in Revenue Board's Proceedings, dated 8th February 1888, No. 119; it is, therefore, not repeated here, but the last-quoted paper is annexed for reference. It seems necessary that it should be annexed for the purpose of making the subject more intelligible to those to whom it is referred for an opinion. The migratoriness of Indian fish varies with the species and the locality, some few limiting their migration to less than a mile, while others, and they are the great majority, extend it to very much greater lengths, from 50 to 100 miles, being ordinary, and as much as 1,400 to 1,500 miles being recorded. General marked migratoriness in Indian fish being then the rule, it follows that no riparian proprietor can claim an *exclusive* right in such a passing property any more than he can claim an exclusive right to all the water in a passing river, and the exercise of such a claim would in either case be an injury to his neighbours. In the case of the fish it would be a more obvious injury than in the case of the water, for in the case of the water he would only injure those neighbours who were lower down the stream, whereas in the case of the fish he would injure both those above and those below. In the case of the water also the trespass would be of but a temporary nature, as it would not prevent the continued existence of the river, whereas with the fish, migration being a necessity of their existence, it would

injure their reproduction, and might even cause their extinction. This being so, the English law on salmon prevents such trespass on the right of others, and Judge Patterson distinctly says of it: "The chief object of the statute is to prevent owners of fisheries from doing what they like with their own, that is it prevents them from killing salmon at certain times and by certain kinds of means, in order to secure fair play to the fish, and to the adjoining owners, and with a view to the public interest." It is still more necessary to do so with the far more migratory Indian fish. Private owners of fisheries in this country may also feel relieved of anxiety about any desire for other than necessary and beneficial interference with their private rights by the consideration that it was not the Government in England, but the very representatives of private rights that themselves pressed for and demanded a concession of individual private rights on behalf of the majority of private interests. They had sufficient knowledge of the property dealt with, to wit the fish, to comprehend that their interests would be benefited by restrictions. Where there is the like knowledge in India it cannot but be recognized that the result of like interference must be similarly beneficial to private interests. But even if it were not so recognised, the public interests in the rest of the river would have an unanswerable claim on Government for legislative protection against the trespass on such rights by intervening riparian proprietors.

5. In England riparian proprietors have not only recognised the value to them of legislative intervention, and themselves procured the law, but have in that law themselves agreed to tax themselves with the cost of administering the law. In India also it is obvious that the unavoidable expenses of taking action for their advantage should be borne in common by all who are benefited by that action. What is the most convenient mode of levying this contribution is a nice question. In the draft Bill of 1883, it was proposed to do it by following the English plan of a license fee levied from the fishermen on the means of capture, so that the fee might be proportioned to the benefits derived, or in other words to the fish caught, the license fee representing the contribution towards the cost of administrating the law, and going to Government, the permit fee representing the landlord's share, be the landlord Government, or a private proprietor, and going to the Government or the private proprietor, whichever imposed it. With the draft Bill of 1883 the English law on the subject is explained as follows:—

"By ignorance and greed fisheries are being injured to the detriment of us all. From the very nature of the case of the rivers to act singly is impossible, for the good or the evil done stays not with the doer thereof, but passes on to all neighbours, both above and below. We must therefore act in concert and have power to impose upon all the necessity to act in concert, and this necessity must be imposed unflinchingly, because great is the temptation to profit unfairly at the expense of others. The unavoidable expenses of taking this action must obviously be borne by all who are benefited by it, and the nearer the rate of contribution can be brought to the rate of benefit derived the better. The contribution is therefore levied in the form of license fees on the means of fishing. These license fees represent then only the cost of combined action for the protection of the fisheries, and the private rights in fisheries are untouched thereby, and private owners can charge whatever they like for the liberty to fish. The law (*i.e.*, the English law) allows no man to fish until he has paid his contribution to the law, and is duly licensed, and then the private owner steps in and allows no licensed person to fish till he has paid for the owner's permission at the rate the owner likes to name."

6. This, it has been said, is the English law which was followed in the Bill of 1883, but it may perhaps cause less appearance of novelty and be more in accord with the customs of the country if the license fee be charged as quit-rent on the area of water. In some cases the acreage of water is already included in the general acreage on which assessment is charged. In such cases it would only be an account transfer to the credit of fisheries of the proportion now booked to the general revenues, and the transaction would not affect the private owner. In other cases it may cause a slight addition to the puttah, but it is entirely at the option of Government to forego this extra claim as a concession to want of knowledge on the subject until it is shown, to public recognition, that advantages worth contributing for have been bestowed, or until it is found that such addition to the funds is required for the maintenance of improved administration. At the same time it would seem inequitable that some should pay, while others are left untaxed.

7. It may be added that the charge of rent on water is no abrogation of existing rights in *un*protected fisheries. It is in India, as in England, merely a contribution to the cost of State protection for their improvement. It is a charge for the new advantage added to the old property, and as such it has, as above stated, been accepted, and even sought for by English proprietors themselves. Moreover, it is as legitimate as a charge on land, both being cultivable areas.

8. It is proposed that the funds required for the maintenance of a fishery department should be raised from two sources :—

I. The quit-rent contribution of private owners in return for the protective advantages they receive and the cultivable areas of water that they enjoy.

II. The tax on nets and traps used in Government waters.

9. It is from these last alone that the revenue in Burma is realised, and it is anticipated that the sums already derived from these sources will suffice for the maintenance of a fishery department, and that in time they will swell, not by enhancement of rates so much as by improvement of the fisheries.

10. The Burmah Act allows as private only such fisheries as have been made private by an express grant of Government, but there are extensive areas of fisheries that without any such express grant are private, such for instance as consist of tanks dug in private property paying land assessment. Such owners cannot show any express grant in their favor. Fisheries have also by implication been inadvertently given to zamindaries by extinction of the Moturpha tax in place of other taxation and without any due consideration of their separate value. This Bill therefore differs from the Burmah Act in first setting on one side all such clearly acknowledged private rights in fisheries (section 14) before extinguishing (section 15) all general claims to common of fishery, or claims laxly based on riparian tenure granted or acquired without any express grant of concomitant rights in fisheries, and at a time when fisheries were taken less note of, and in questionable cases the onus of showing a distinctly acknowledged private right is made to lie consequently on the person so claiming; while in all clear cases the private right would, of course, be as readily acknowledged by the local authorities as in like cases in connection with land.

11. But, where they are admitted to exist, they are divided into two classes, in order that class I, that is isolated from, and cannot therefore injure, other fisheries may be exempted from all interference, at the same time that owners under that class participate in the protective benefits of the Bill. It matters not to the State or to their neighbours if owners under class I like to poison, to dynamite, to overnet, bale out or otherwise destroy their fisheries; they are therefore left uninterfered with. But it does matter to the owners that instead of their fish being still considered *ferœ naturæ* they should be able to prosecute trespassers; they are therefore introduced into the Bill in order that they may benefit by legal protection. Owners under class II who have only a passing property are given the same benefits, and are subjected to only such interference as is necessary to prevent their injuring the joint rights of their neighbours in the same passing property. Neither class is charged anything for the liberty of fishing, for it is their own, and they can themselves make such charges as they like. They are charged only a quit-rent on the cultivable area of water just as they would be charged assessment on a cultivable area of land; and that too is left optional with the Government to charge or to forego.

12. About the machinery necessary for working the law nothing is said in the Bill beyond giving authority to the Collector, because it is understood that a special staff is considered undesirable on the grounds both of expense and of additional interference with the people. It is proposed therefore that, as in Burma, the Collector shall work the law through his ordinary staff of Revenue, Magisterial, Police and Forest subordinates.

13. For technical knowledge, however, the Collector and his untrained subordinates will stand in need of assistance quite as much as they are found to do in forestry, in cattle disease inspection and in other specialities. It is proposed therefore to give him such technical assistance much on the same lines as have been adopted in Forestry and Engineering.

14. In order to secure for the department the hearty co-operation of Collectors, it is proposed that such Assistant Conservators of Fisheries as may be needed shall be placed under them as their *pro tanto* Assistants, mastering the details of the subject for them, keeping them informed, and just as a Revenue Assistant would do in his division, administering their charge under the Collector's orders; it being distinctly understood that the Assistant Conservator had no authority to pass any order for the disposal or regulation of any fishery except as the Collector's Assistant, and subject to his orders, general or particular, as each individual Collector may prefer. The orders passed should generally be carried out like other revenue orders through the Tahsildar; or if the Collector preferred to issue his orders direct to his Tahsildars, he might do so, sending a copy to the Assistant Conservator for information, for the department, skeleton though it is, must be kept thoroughly informed of all that is done, or it cannot advise.

15. In order, at the same time, to secure, in such a special subject, intelligent administration, with such approach to unity of principles as circumstances will admit, it is essentially necessary that there should be a specialist Conservator of Fisheries for the Presidency, and that his influence should be real and effectual; in point of fact that he should advise Collectors as to what ought to be done, and that they should loyally give his advice effect; still Collectors might not improbably object to being placed under his orders. To prevent conflict in the compromise of divided authority has always been the difficulty. It is proposed to avoid it by the following arrangement. As in the matter of land-tax, which is a Collector's special province, classification of the productive powers and circumstances of the soil, for the purpose of assessing the land-tax of the country, is nevertheless made by a Special Settlement Department, so, much more in the matter of less understood water is it necessary that the classification of the water under different heads, according to its fish-producing value, and more especially for the purpose of technical treatment, should in the last instance be made by the technical department. This settlement made on general broad grounds by the Conservator, it would then be for the Collector to introduce it. Thereafter, except where modification of classes was found by experience to be necessary, the Conservator is to issue no orders for the disposal or regulation of any fishery either to the Collector or to the Assistant Conservators of Fisheries. All such orders are to emanate from Collectors, who will authorize their Assistants, the Assistant Conservators, either generally or particularly as they may prefer. Copies of all these orders are to be simultaneously supplied by Collectors to the Conservator, just as a Collector always gives his own Sub-Collector a copy of any order he issues in his division. By these copies the Conservator will be kept generally informed of what is going on all over the Presidency, and if he observes anything technically injudicious, it will be for him to point it out to the Collector, and in most cases it is to be hoped that that is all that would be necessary for an intelligent settlement of the matter. But in exceptional cases in which the Collector declined to be moved, and the Conservator considered the matter important, the Conservator should have the power of *ad interim* veto, that is to say, he should not be at liberty to pass any order of his own in connection with any fishery, but he should have authority to require the Collector to hold his own orders in abeyance till such time as a reference had been made to the Board of Revenue. At the same time the Conservator should be at liberty to correspond freely with the Assistant Conservators with a view to keeping himself particularly informed of what was going on and to advancing scientific research, and he should be at liberty to direct the course of inquiry and to command the attendance of the Assistant Conservators.

16. No mention is made of this in the Bill, as it is thought it can be provided for by Government orders in the form of a Fishery Code, as in other departments.

17. The arrangement comes to this, that the interests of the ryots are thoroughly safeguarded by being entrusted to their ordinary guardians, the Collector and his subordinates, with whom alone the whole executive authority will lie, and any tendency on the part of Assistant Conservators to unduly press their own special departmental views would be sufficiently moderated by their being in this respect under the Collectors. Any like tendency on the part of the Conservator would again be subject to control by the Revenue Board, from whom, and not from the Conservator of Fisheries, the Collectors would in all cases receive their orders.

18. While the executive disposal of fisheries would thus lie wholly with Collectors, subject, as usual, to the Revenue Board, the primary broad classification, the subsequent technical supervision and the conduct of research in all matters connected with the scientific sides of the question should equally lie wholly with the Conservator, who also should frame the annual budget and allot the funds, subject to the general control of the Board of Revenue.

19. The only danger seems to lie in reducing the Conservator and Assistant Conservators to inoperative powerlessness. If the department of fisheries becomes ineffectual from that cause, the fault will lie with the Board and Government in not requiring due weight to be given to the technical advice of the Conservator. The danger of failure from this cause seems to be less than that of erring on the other side.

20. The number of Assistant Conservators will probably be very few, and their cost certainly well within the present income derivable from fisheries. These are minor details which can be further considered when the main lines of the Bill have been agreed upon.

21. Thus no extra funds are required. It is only expected that the sums now derived from fisheries shall be allotted to their improvement till such time as fisheries can return a surplus.

22. The absence of a special subordinate watchman staff for preventing infringement of the several provisions of the Act can further be provided for in another way whenever it may be found necessary. It is the custom to let out whole fisheries to a contractor, who makes his own arrangements with sub-contractors of the fishing classes for the actual working of the fishery. The continuance of this accepted custom is provided for in section 18 (*d*) of the Bill, and in giving such a contract it is only necessary to make it subject to responsibility on the part of the contractor, with security in case of failure, for seeing that the Act is not infringed without the offenders being brought to justice. The imposition of such responsibility, concurrently with enjoyment, is found to work well in other departments and to obviate the necessity for any special supervision more than can ordinarily be given by the police.

23. It remains to notice certain minor details.

24. It was objected that the definition of "fish" in my Bill of 1883 was too exact, terms being used which had no vernacular equivalents. It ran thus:— "fish includes also cetaceans, crustaceans, mollusks and chelonia or turtles and tortoises." The definition of fish used in the present Bill has, therefore, in deference to such expressed opinion, been taken from the Burma Act, in the hope that the legal mind will accept "fish" as covering "cetaceans" though they are mammals, and will take "shell-fish" and "turtles" as including the others. It is for Government to decide if it will take these risks or revert to my former wording.

25. In Section 15 the words "any local Act notwithstanding" are entered to eliminate any uncertainty about Local Fund Boards and Municipal Commissioners having inadvertently been given powers under their Special Acts (*e.g.*, Madras IV, V, 1884), which might prove lamentably obstructive to fisheries, for such bodies have no piscicultural capabilities, and their intrusion would be mischievous.

26. Section 18, clause (*f*), admits of barring the general angling right of the public under clause 2 of section 15, in the case of waters specially rented by angling bodies, European or Native. In Bengal this is a very highly appreciated boon, specially so among the natives, and may well grow to be so here too. The same provision stands in the Burma Act as a proviso on a proviso—a form of entry which has been avoided here.

27. The power to acquire [section 18 (*h*) (*i*)] is not likely to be often needed; but cases may occur of private rights which are obstructive. It is a precautionary clause which can hardly be objected to.

28. The prohibition of netting within 100 yards of a weir [section 21, clause (*g*)] is additional to the Government instructions, but it is only necessary to see a weir with the fish crowded under it, waiting to be able to get up, to recognize how essential the provision is.

29. Stroke-hauling (in the same section) in like circumstances would most certainly be condemned in all English waters. It is systematically practised at the Okla weir near Delhi, and probably elsewhere also. Fish prevented by the weir from ascending to spawn are habitually foul-looked as they lie on the shallows. If the Government disapproves the addition, it can be cut out. It is of less importance than netting within 100 yards of a weir, because not so wholesale.

30. Diverting and bailing out a stream is said to be commonly practised. It means the destruction of everything in the place down to the tiniest fry, and destruction of the young of fish when so small as to be not worth eating is waste of fish life, and prevents the restocking of the river. Or even to catch and eat as fry, of from 2 to 4 drachms each, fish that will readily grow to 10 or 20 lb. weight each, is an obvious waste of immature fish life. To illustrate the fact, a calculation made on actuals shows a waste of immature fish of 67,981 tons in a single river in a single year.

31. The use of small meshes has the same result. Dr. Day has quoted enough of witnesses to the reckless destructiveness of small meshes, and oral evidence on this point was given before the Delhi Conference by one of the members present.

32. The addition of section 22 is to prevent the prohibition of poisoning from bearing heavily on owners of mills or other industries who poison rivers with their refuse water.

33. The monsoon time is held to be the close time provided by nature in this country, Indian rivers being then so swollen with floods as to be generally unnetable, and the detailed knowledge necessary for a further provision is somewhat deficient. Still there are some fish about which the knowledge is enough. For instance, the Hilsa (*Clupea ilisah*), known also as the Sable, Pala, Oolam and Palasah, is similar to the Salmon in its habits, living in the sea and running up rivers to spawn in them. If fished incessantly with net after net their passage up to breed can practically be stopped as completely as by fixed engines, and their means of reproducing themselves can thus be cut off. They stand in as much need of a close time as do salmon, and the power of providing it in their case need not lead to its being exercised harshly or injudiciously in connection with other fish.

34. The markedly migratory character of Asiatic fish which has been shown to be so exceptionally strong in connection with most, if not all, Indian freshwater fish, and which is seen above in the Hilsa, confronts us again as an exceptional characteristic in a goodly number of valuable estuary fish which have no existence in English fisheries. Many sorts of grey mullets (*Mugil*) throng our estuaries and saltwater canals. The Roeball, Cock-up, or Nair fish (*Lates calcarifer*), weighing from 10 to 30 lb. or more, penetrates far into the interior, 650 miles inland having been recorded; the *Chanos* of equal size, several sorts of *Polynemi* and of *Cybii* (Seers) of not much inferior size, the *Elops*, *Megalops* and many sorts of sea perches, and several species of *Arius* (catfish) of all sizes, ascend for varying distances, many of them for the purpose of spawning in our rivers, some for preying only. They need protection at the mouths of our rivers just as much as the Salmon or the Hilsa, and will repay it as well. The close time that they need is that they should have at least one free running day in the week, and it should be possible for Government to make rules for the purpose. Mr. Barlow, the Collector of Madras, writes me, that living, off and on for fifteen years on the banks of the Adyar, he has himself observed how injuriously that fishery has been effected, till at last the fishermen themselves are complaining to him of the destruction of the fishery. Large sea nets payed out from boats sweep the whole mouth of the estuary, and numerous sorts of small meshed nets are plied by different classes. The result has been that, in course of time, the fishery has become practically destroyed, and the cry raised is against the large sea nets, because of their sweeping size. It may be taken as a case in point illustrative of how all but our largest estuaries are liable, when in thickly populated localities, to be depleted, and how easy is the remedy. It is not the large sea nets that are as much to blame as the fry-catching small-meshed ones, which, while they do the most injury, return the minimum of advantage in fish food for the people. The fry should be given immunity by prohibiting all nets, except shrimp nets, in the estuary, with a mesh smaller than the size to be hereafter agreed upon and notified under the rules, and the survival

of a sufficient proportion of the parent fish for spawning purposes should also be provided for by granting them a free running time every week from sunset on Saturday to sunrise on Monday, and prohibiting netting in the estuary at nights from sunset to sunrise. If there is any difficulty about enforcing these provisions, a fishery contractor, bound in security, might be utilized, as in other departments. With these provisions the fishery would soon recover itself. Not only in our extensive and numerous estuaries, but in our many miles of salt-water canals might tons and tons of food be added to the food-supply of the people by such simple provisions. If the objection be taken that there are estuary fish of small sorts that never in maturity attain a size that can be captured by a net with a mesh of the minimum size allowed, and that they consequently will be lost, the answer is that in any but a small closely supervised private fishery it is practically impossible to secure the return to the water alive and uninjured of the fry of the larger sorts of fish, and that practically the only way to secure them immunity is by enlarging the size of the mesh, and if with them certain minute sorts of mature fish also escape capture, it is very much more important that the former should escape than that the latter should be captured, the proper function in nature of the latter being, not that they should be food for man, but that they should be the food of the larger sorts of fish which form more substantial food for man. The presence of these minute forms it is that brings the several predatory *Polynemi* and the Seers (*Cybii*) of sorts, and a number of sea-perches into the estuaries, and supports them in increased numbers in the sea near the shore and about the mouths of our rivers, so that the escape of these minor forms of estuary-breeding sea-fish will be a distinct advantage both to our estuary fisheries and to our sea fisheries; so much so that in America pisciculturists have even gone so far as to breed salmon in the rivers in order that their fry might feed the sea fisheries. The special advantage of protecting coast fisheries in a country in which cyclonic storms with no harbours preclude deep-sea fishing is further dealt with in connection with sea fisheries and is to be remembered here. The presence of these minute forms it is also that feeds the larger predatory fish that come into our rivers to spawn rather than to prey, and yet require food. Hence the need not for Hilsa only, but also for many estuary fish, of a close time with regulation of the size of the mesh. Its importance can hardly be overestimated.

35. Many a mighty Indian river dwindles in the dry weather to a succession of deep pools connected with each other by no more than an ankle-deep stream and the parent fish of the larger sorts drop down with the dwindling stream to these pools. In India they seek these pools as in England salmon seek the sea, and they have no retreat but these pools. These are the parent fish by which the river is to be stocked next breeding season. If in the hot weather these pools are all netted out, the river is denuded of breeding fish. It is provided in the Bill that a certain proportion of these pools may be preserved as stock pools.

36. The provisions for the protection of the pearl fisheries are the same as in the Bill for 1883, and the explanatory remarks supporting them are extracted from the report of that year for easy reference:—

"As regards the pearl and chank fisheries, I have followed the lead of Ceylon, except that I have modified Ceylon Act XVIII of 1843 as being more stringent than we shall probably require.

"It may be objected that it has hitherto sufficed by mere assertion, without law, to maintain the Government exclusive rights to pearl oyster (*Avicula fucata*) and chank (*Turbinella pyrum*, *T. ropa* and *Voluta gravis*) fisheries, and that it will suffice equally for the future. The same argument might have been equally well advanced with reference to freshwater fisheries a year or two ago, but now it is found to be out of date. It may similarly be out of date any day with pearl and chank fisheries. Now the sea fishermen are easily managed by an appeal to their interests through their headman (játhi thalavan) as stipendiaries of Government. But if their or other interests ran counter, there is nothing in the law to prevent, or to authorise any one in preventing, an organised company from fishing our banks and realising Rs. 1,10,000 in a month and a half, the sum realised at the last pearl fishery in 1862. The stake would be worth the playing for, and there would be nothing illegal in it as the law now stands. The present Fisheries Bill would therefore be incomplete if it left the possibility unprovided against, and if, in the event, it is found that the provision is not called into play, there will be no disadvantage in its sleeping in the Bill, just as a legal penalty for murder inflicts no injury on communities who have no murderers, and is not on that ground to be considered an unnecessary legal provision.

"The chank fisheries also are valuable, more valuable than the pearl fisheries, as they are steady. There was a pearl fishery in 1861, and again in 1862, the last yielding Rs. 1,28,769 less 14 per cent. for charges, and the total income since 1807 has been Rs. 14,06,882, less Rs. 2,42,000 expenditure. There has been no pearl fishery since 1862, whereas the chank fisheries yield a steady annual income. Last year it was a clear Rs. 28,450-8-6 net. The Ramnad zemindári also enjoys a chank fishery which, from these figures, may probably be taken approximately to yield a quarter of a lakh of rupees a year, though whether a zemindari has any legal right to a chank fishery, many miles out to sea, is a matter to be separately discussed.

"Admitting, then, the value of pearl oyster and chank fisheries, the legal question arises at what distance out to sea can any Government claim to exercise exclusive rights of fishery as against other Governments. As against its own subjects, it can concern no one else how far it may choose to limit their rights of fishery, and practically it will seldom, if ever, be necessary for the Government to deal with any but its own subjects. But the case might easily arise of a company under unauthorised cover of a strange flag fishing our pearl banks at Tuticorin and running off their takes to the nearest foreign territory at Karikal or Pondicherry. As the law now stands, we should have to fold our arms and look on, for all the pearl banks are well beyond the three-mile or Admiralty limit to which jurisdiction ordinarily extends under the Territorial Waters Jurisdiction Act, 46 and 47 Vic., Chap. 73.

"The question arises whether in the peculiar circumstances of the case, the Government would be justified in passing a law which should enable it to protect its pearl fishery as an exclusive fishery some eight, ten or twelve miles out to sea. Ceylon protects its pearl banks twelve miles out to sea, and, looking to the fact that it is no novel claim that is being put forward by this Government, but only a desire to make formally legal a protection that has been effective ever since 1807 in Madras, and since the Dutch Proclamation of 28th May 1665 and 15th November 1745 in Ceylon, objection can scarcely be taken to Madras doing what Ceylon has done in its Regulations III of 1811 and XVIII of 1843.

"Looking at Hall's International Law, it would seem that 'the true key to the development of the law is to be sought in the principle that maritime occupation must be effective in order to be valid,' which is the explanation of the three-mile or gunshot distance having been primarily accepted; and that 'it is probably safe to say that a State has the right to extend its territorial waters from time to time at its will with the increased range of guns,' though, on the other hand, when 'territorial waters are so placed that passage over them is either necessary or convenient to the navigation of open seas * * * they are subject to a right of innocent use by all mankind' for the purposes of commercial navigation,' and this innocent use included 'waters which could be used as a thoroughfare or into which vessels could accidentally stray or be driven,' and these limits were based on the double consideration of safety from vessels of war, and of right to the 'fish and the pearls, the coral and the amber' that the sea yields.

"It is exactly on these principles that the Ceylon law is founded in extending legal protection to its pearl fisheries at 'any place within twelve miles of any part of the shore at low water-mark,' &c., and if the Indian Government throws no difficulties in the way of the innocent use for purposes of commercial navigation of its waters, it may in like manner surely provide for the safety of its fisheries therein.

"A further reason for having no hesitation in declaring a twelve-mile protective limit may lie in the fact that from our remote position in India no foreign power can claim ever to have exercised any right of fishery anywhere near the waters protected, or to be in any way injured by our protection of them. In this respect the case is very different from the German Ocean, which was contended for in naval action by the Dutch and English, the Dutch being compelled to pay £ 30,000. If the same limit is conceded to the small plots of French and Portuguese territory dotted about our Indian Empire, those powers can hardly take objection to a law so obviously fair to both.

"To what parts of our shores the protective limit should be applied seems scarcely known, and it will be most convenient to allow it to be fixed from time to time by Government proclamation; as certain matters are allowed to be fixed with the force of law in the recent convention between England, Germany, Belgium, Denmark, France and the Netherlands, with reference to the North Sea (see Sea Fisheries Act, 1883, 46 and 47 Vic., Chap. 22, sections 7 and 11), I have therefore mentioned such as are known in the Bill, and left the rest to follow by order of the Governor in Council. Among these latter is the undecided question whether the Ramnad zemindari is to exercise the right which it claims of exclusive chank fisheries some eight or more miles out to sea."

37. In connection with sea fisheries reference may be made to G.O., dated 22nd June 1886, Mis. No. 330, Marine, in the enclosure to which it is shown that peculiarities of the position point to Indian sea fisheries being treated differently from English sea fisheries. The weight of opinion was against interfering with the size of the mesh in sea fisheries in England because, if littorally overfished with small meshes, the remedy lay in going further out to sea. This remedy is not within the reach of Indian fishermen, because Indian seas are subject to cyclonic storms and have but few

harbours of refuge. Consequently fishing craft must be either such as can weather a cyclone, or such as can be hauled up high and dry upon shore. Practically they are with but few exceptions restricted to the latter description, and not venturing out of sight of land, Indian fishermen are consequently cut off from deep-sea fishing. Hence it is necessary to preserve for the Indian sea fisherman the only sea-fishing that is practicable for him, and that is the littoral fishing. The Madras sea fishermen complained, it will be remembered, that their sea fishery was depleted. The remedy is to give it a rest from the constant plying of small meshed nets that catch the fry of the larger sorts of fish close along the shore, as well as the smaller sorts of fish which are the food and the attraction of the larger predatory sorts. Still I hesitate at present to go so far as to interfere with them prohibitively, till it has been tried whether small meshes could in effect be sufficiently discouraged by all nets with meshes under a certain size being taxed increasingly as they were smaller, while the larger meshes were left free. This medium tentative course should serve to show the fishing classes that what we seek is their advantage rather than our revenue.

38. What should be the size of mesh to be laid down by the rules as the minimum permissible is a matter of some intricacy. It might well have to differ in reservoirs or tanks, in rivers, and in estuaries, and to differ again with the size of rivers, and with the circumstances of the reservoirs, in other words, with the localities. To discuss these details of application at the present stage before the prime question whether the size of the mesh is to be regulated at all is enacted, would seem not only to be premature, but calculated to endanger the overclouding of leading principles by turning aside to subsidiary details of application. It would seem time enough to discuss all such details when the first principles of the Bill have been accepted, and we come to framing the rules under the Act.

PROCEEDINGS OF THE BOARD OF REVENUE

(Land Revenue).

H. S. Thomas, Esq., F.L.S., F.Z.S.

Resolution—dated 8th February 1888, No. 119.

In G.O., dated 19th January 1888, No. 389, the Government has communicated a letter from the Government of India, dated 20th December 1887, desiring that certain subjects may be taken into consideration in connection with the better preservation of the fish-supply in India.

2. Of these, the first is—

"I. Whether sufficient information is available regarding (*a*) the demand for the supply of fish, (*b*) the causes which may be at work to diminish that supply, and (*c*) the possibility of increasing it."

3. The sense in which the sufficiency or otherwise of present available information is to be weighed is not exactly stated; but as the letter under reply is in continuation of No. 69—3-4 of 7th December 1887, replied to in Board's Proceedings, dated 24th January 1888, No. 72, it seems clear that the question is whether present knowledge is sufficient to show the necessity for legislation and sufficient to indicate the course it should follow. To these questions the Board reply in the affirmative: it is sufficient.

4. To the further question whether present knowledge is sufficient to lead to the expectation that any legislative measures taken thereon will be perfect and final, and that the increase of the food-supply obtainable thereunder will be all that can possibly be desired, the answer must, at the same time, be in the negative. It is not in the nature of things possible that over such a vast area as the Indian Empire, without a single expert deputed to give his whole time to the inquiry, with such widely differing climatic surroundings, and such a great variety of sorts of fish, and so many separate peoples operating differently upon them, the information picked up at odd times by officials fully employed in other more pressing duties can be at all points as exact and detailed as is desirable. But enough and more than enough is known to fully justify an affirmative answer to the question whether "measures requiring legislation are necessary to prevent the destruction of fish" in wasteful manners; enough and more than enough to warrant the assurance that legislatively supported measures could at once be taken that would promptly increase the food-supply of India in a manner not credible to those who have not studied the question.

5. It is the incredulousness of unappreciative ignorance alone that has so long delayed the fulfilment of the duty which Government owes to the country in this matter, for the information necessary to impel to action any Government appreciative of the responsibilities of the position has slumbered on the Government record shelves for close upon two decades, and the inquiry which it is now proposed to make has already been made, and the results have been submitted. So long ago as 5th March 1868,* the Board Member who is responsible for these proceedings showed unmistakable necessity for action in words from which a brief marginal extract is made, in words that were quoted and endorsed by Dr. Day in 1871; and questions, much in the sense of those now put by the Government of India, having been addressed by Dr. Day to "the various Civil authorities throughout India and Burma as well as to any one who as a naturalist, sportsman or philanthropist takes any interest in the subject," the mass of information obtained in reply was digested and submitted by Dr. Day to the Government of India in his report of 1873, which forms the basis of the present Government of India reference. Fifteen years ago this was done, and it is submitted that a renewal of the inquiry at this date on the

* In letter printed in G.O., dated 27th November 1868, No. 2282—"The myriads of small fry that are thus destroyed is beyond all computation. I saw one day some thousands as fine as a straw within the compass of one earthen pot; they were to form one meal for a laboring man, whereas they might have sufficed to stock a lake and feed a town. I have also seen basket-loads of fish about the size of a man's thumb, fish of a sort which I know grow to the size of a man's thigh. Small fry of many sorts are sold by the seer," &c. &c. &c.

same general lines is not calculated to elicit from the same sources, exhaustive as they were of all the unprofessional intelligence that could be evoked in aid of the matter, any more exact and detailed information than was then obtained. It was enough to show that legislative action should be taken without delay, and that any further inquiry should be delegated to experts. In the opinion of the Board, this, after the loss of fifteen years, is still the position.

6. In the opinion of this Board a Fishery Bill for all India should, without further unnecessary loss of years, be drawn on the basis of the present available knowledge and circulated to all provinces for criticism. This is for every reason the first step to be taken. It would be advantageous both to opponents and supporters of such a measure.

7. It is due to opponents on the one hand because, in place of a general undefined fear that such a measure must be fruitful of oppression, they would have definedly laid open to them every particular in which legislation, and action thereunder, was calculated to touch the people of the land, and they would be freely invited to indicate every possible hardship, and so to make the way easier for its avoidance. Though as regards the majority of opponents it may be taken as a general rule that objection is in an inverse ratio to knowledge, still legitimate objections there may well be many, some perhaps that could not be anticipated because of racial or geographical peculiarities not known beyond the locality. They should all be courted as valuable and carefully weighed.

8. Supporters of action in the direction of the increase of the food-supply by the preservation of fish from wasteful destruction would also have the advantage of seeing the measures proposed, so worked out in detail as to put them in a position to judge whether or not they were applicable to the peculiarities of their locality, and to the practices of their people; and the information thereon rendered would, it is submitted, be much more valuable than a mass of general observations like those made to Dr. Day in answer to like questions now put by the Government of India.

9 Presumably the person entrusted with the drafting of such a Bill would be one selected, not on account of his legal knowledge, nor one acquainted with English fish only, but one who had made some special study of Indian fish. If, while the Bill was in circulation, such an officer was allowed to visit such places as seemed to present difficulties, not only would he be afforded the means of increasing his knowledge, but it might be safely anticipated that, brought face to face with the actualities of the position, his special knowledge, and habits of fish observation, might often suggest an easy way out of the difficulty that it would not be possible for him to conjecture from correspondence, simply because it had not occurred to the correspondent, be he objector or supporter, to note and mention certain indicative facts. And it is remarkable how often facts and their bearings are unintentionally distorted by persons unaccustomed to the study of fish.

10. This would seem to be the best "system of investigation to set on foot for supplementing" present information, for it would seem that further inquiry made by any but specialists can hardly lead to anything more than has already been obtained by the general inquiry which Dr. Day has already made as exhaustive as he possibly could. The Bill amended and enacted in the light of such criticisms and supplemented information, its general administration would need to be entrusted to specialists who, in the conduct of actual application, would best be able to avoid shipwrecks, and could not fail to increase knowledge which could be made available in any subsequent amending of the law.

11. The fishery laws of England have not been the outcome of a single session, but of years of discussion in several Parliaments, and it is not to be anticipated that in the much wider area of India, with its greater climatic variations, and its several nationalities of people with differing practices in fishing, and infinitely more numerous fish to capture, the first Fishery Bill can be in all respects perfect. But enough is known to justify the immediate drafting of a Bill, and nothing can be gained by postponing it to further general inquiry.

12. These general remarks seem to meet the inquiries made under the first three heads. With reference to the fourth, it is premised that "whether canals can be utilized for the purpose of increasing the fish-supply" and to what extent and in what manner must depend on the nature of the canals.

13. Where there are fresh-water canals that are perennial they can doubtless be utilized to great advantage. Their several circumstances would have to be studied to see how natural advantages can best be availed of. In all probability there would be exceptional facilities for utilizing them as reservoirs in the manner shown in connection with Tanjore reservoirs.

14. But there seem to be no perennial fresh-water canals in the Madras Presidency, the Kurnool canal and those connected with the Godávari and the Kistna being annually closed for repairs, in process of which they are run dry. To make any further use of these canals than is already made would seem to be difficult. But the way in which personal inspection has afforded light in Tanjore is suggestive of like possibilities here also.

15. The irrigation or canal system of Tanjore would seem at first sight to be equally, if not still more, hopeless. The so-called rivers by which the district is irrigated are really broad artificial canals taken off the Cauvery. For some eight months of the year they are in varying stages of flow from mighty rapid volumes of flood water to easily fordable little streams, and then for months together they are dried up so completely that the naked foot is pained to cross the scorching arid sand. Fish preservation in such annually failing waters would at first sight seem to be utterly out of the question. But a study of the habits of the fish and of the people has shown that, without any vexatious interference, without any but the friendliest intervention in a manner sure to be welcomed, they—the people and the sundried canals—are both capable of being turned to the most valuable account. When the method of utilization is explained it will be found to be simple in the extreme, and so obvious that the marvel is that through the whole period of the British rule in India, and through that of the Tanjore dynasty which preceded it, no one has ever conceived the idea before, though the wasteful destruction has been all the while going on openly under express authorization by license. The matter is noteworthy as indicative of how a specialist and none but a specialist, accustomed to the observation of fish can find a way of turning seemingly insuperable natural difficulties into valuable aids for increasing the food-supply of India. The story may be told in the following extract from a recently published work entitled "Tank Angling in India," by Henry Sullivan Thomas (Publishers, Higginbotham and Co., Madras, December 1887):—

"From the variableness of rivers in tropical India the fish are of necessity much more migratory than in Europe. Carp that would be stationary in Europe are in India highly migratory. This has been dwelt on at length in 'The Rod in India.' This intensified migratory tendency is largely taken advantage of to capture them in fixed engines, and such fixed engines, used now only for destruction of fry, might equally be used for the preservation of the better species. If I quote from a paper of my own written in reply to one from the President of the Punjab Angling Club, it may serve to illustrate how the tanks in point could be further supplied with valuable sorts of fish, and how other tanks also which are not river-fed could be stocked, if the fry had not to be carried any expensive distance.

"The experience of my last Christmas holiday outing, small as it is, seems to me sufficiently illustrative of the value of fishery protection. Near our fishing-place was an irrigation channel, across which was constructed a close meshed cruive. Looking at the fish taken in it I observed, that they weighed each a few drachms at most, and I heard and saw that a double handful of them was sold for one-twelfth of an anna, and yet not a few of these miserable morsels were fry of fish that ran to 20 lb. each. Seeing such things is believing, but how to reproduce them for the conviction of other minds is more difficult. I wanted to do so, as I have wanted any time this last 17 years. So I told the owner of the cruive that I would buy a potful of him, and in four hours he brought me a large potful. With my two friends in camp we separated them into species, and counted them out, and weighed them. It is pretty to see the rapidity with which the practised eye of a man of the fisherman caste will pick out the different sorts. We discarded all sorts which did not grow to over 2 lb. in weight, and indeed busied ourselves only with such as grow to 20 lb., though in England any fishery law which proceeded on such lines would have to discard roach and dace and the majority of trout too. Of the fish that run to 20 lb., *Labeo calbasu*, there were 67 in that pot, and their total weight was ten ounces, so that their individual average weight was 2·388 of a drachm: and it was at this size that they were being caught and used as food at one pie a double handful. Another equally valuable fish, *Cirrhina cirrhosa*, averaged in like manner 4·57 of a drachm and was being sacrificed in like manner.

"The owner of the cruive told me that earlier in the season his takes were very much larger, and that the sorts of fish which ran at night were different, and he particularized them. I said bring me your night take to-morrow morning and I will buy the lot; so he did; and we separated and weighed and counted them in like manner, and made immediate notes of everything then and there.

"These examinations were instructive, as well as confirmatory of the cruive owner's statements. They showed that of several sorts the fry were at that time, Christmas, well grown, so that the fry-taking time was, as he said truly, drawing towards a close, and the takes earlier in the year must have been, as he said, much larger; they showed also which were the earlier spawning species, which the later. They showed also that for the purposes of the calculation which I shall hereafter base on these data, fry taken earlier in the season would have been much smaller than 4·57 and 2·388 of a drachm each, would probably have been less than a drachm each, and thus would have been much more favorable to evidencing the waste of immature fish life; for the cruive owner, it will be borne in mind, cared nothing about sorts of fish caught, he only thought of potsful, and stated that in the earlier fry-running season he got more potsful though the fry were smaller. I only mention it here to show that the data on which I go were, as regards season, very unfavorable to my purpose.

"The data as regards locality were equally unfavorable, for the channel which I tested was one of the furthest from the breeding places of the parent fish, and was therefore calculated to have much fewer fry in it than those that tapped the breeding grounds more directly. Thus it will be seen that both in season and in locality the basis of my calculations errs strongly on the

side of moderation, and that if I take this season and this stream, and assume the same proportions in other streams throughout the fry-netting season, I may be safely acquitted of exaggeration.

"Again, I shall take only four months instead of six, because though they told me that they equally caught the fry in the two earlier months, they caught them then in the smaller channels, presumably because in the earlier two months the major channels, such as I tested, are then carrying a volume of water too strong for a cruive to be erected in. I have therefore no means of gauging the takes of the two earlier months, and rather than be led into any possible misconclusion, I throw them out altogether.

"Similarly, I will elect to err again on the side of moderation in the weights of fish. Though *Labeo calbasu* and *Cirrhina cirrhosa* run respectively to 20 lb. and 10 or 15 lb., I will take only an average of 2 lb. each as the basis of my calculation, and with the fish taken at night also I will be chary of overestimating weights. They were *Barbus chrysopoma*, *Ophiocephalus striatus*, *O. gachua*, *Gobius giuris*, *Mastacembblus armatus* and *Cirrhina cirrhosa* again. Of these also I throw out altogether *Ophiocephalus gachua* and *Gobius giuris* as too small, though they are both great favorites with the natives, the latter especially, attaining a cubit in length and the thickness of a man's forearm and 3 lb. in weight.

"Having then made all these deductions in favor of moderation, I take the irrigational statistics of one river in the Madras Presidency, the Cauvery with its affluents, and find that in that one river alone the immature fry destroyed and eaten when weighing only a drachm or so each represent the following fish:—

	TONS.	CWT.	LB.
Cirrhina cirrhosa weighing	26,162	6	8
Labeo calbasu "	37,932	11	78
Barbus chrysopoma "	1,971	2	88
Ophiocephalus striatus "	1,670	4	36
Mastacembblus armatus "	245	7	61
Total ...	67,981	12	50

"It will be observed that in this category of fish there is not a single mahseer, *Barbus tor*, nor a single *Barbus carnaticus*, though the river abounds in them. The explanation lies in the fact that these fish breed in the upper rocky mountainous parts of the river, and my data were taken from close down to the sea. It was not in the nature of things, therefore, that any of them should be found in the particular cruive which I examined; but that the mighty mahseer is also caught in other cruives higher up the river, and similarly sold for the veriest trifle at the weight of a drachm or two is an equally demonstrable fact to any one who will walk the rivers with his eyes open.

"Again, it will be observed that in the above category of fish there is not a single *Wallgoo uttu*, a fresh-water shark that attains 6 feet in length. The reason is that their running season was past.

"Thus, both in locality and in season, have my data been necessarily imperfect, giving at best but a most inadequate idea of the weight of good fish food wasted; and yet, even from those inadequate data, we find that, in one single river in this Presidency, there are annually destroyed by man, by means of fixed engines, at the average weight of a few drachms each, fry which, if allowed a year or may be two years' grace, would weigh 67,981 tons.

"The way in which all this fish life was wasted was further instructive. In this cruive they were taken quite uninjured, and nothing was easier than for the cruive owner to have selected the superior sorts, and kept them alive and vigorous in a penned part of the stream, selling the inferior sorts as usual to the villagers, and getting double or treble the price for the live fry of the superior sorts from any piscicultural agency, for the purpose of stocking ponds. Thus could many of the existing cruives or fixed engines be utilized for stocking ponds, without being interfered with otherwise than advantageously to the cruive owners.

"I would not be misunderstood as supporting cruives altogether, for where they stand in the upper parts of rivers they ought to be prohibited; but when the water has left the river in an irrigation channel, and the fry going down the channel must eventually be dried up in a rice field and eaten by egrets, then they may as well be caught in cruives and eaten by man in preference, and in such permitted cruives, and their name is legion, the superior sorts might be saved for stocking ponds.

"But to do it a regular organization is necessary."

16. In continuation of the above extract it may be added that these are not mere theories of the possibilities of utilizing the seemingly impracticable canals of Tanjore. They have since been made proved facts by the test of actual experiment. Certain gentlemen who, for sporting purposes, had acquired a protected reservoir, in five days at a cost of Rs. 5 put in 5,500 well-grown fry of from 2½ to 5 inches long of one selected sort that will grow to from 10 to 20 lb. each, at a rate of growth indicated at page 122 of the above-quoted work. From a food-

supply point of view this outlay of Rs. 5 on fry will in two years, without any other expenditure, produce, at the cheap rate of 1 or 2 annas a lb., meat worth from Rs. 700 to Rs. 1,400, for moderation sake it may be called Rs. 500. This outlay of Rs. 5 covered all the expenses of selection, and live carriage, and appliances for carriage, as well of capture. Had the fry been sold in the usual way by the dead handful, 5 annas would have been their outside value. Protected they become worth at least Rs. 500 in two years as food. This carriage of selected fish has also been conducted for stocking angling reservoirs in different places over hundreds of miles of road and rail, and by properly organized arrangements under a fishery department could easily be done annually for all the public and private reservoirs all over the face of the country, with millions of fry of selected sorts rapidly producing tons of food in waters that are now practically empty, and it could be done without any outlay on appliances for artificial breeding and hatching, such as are used at great cost in England and America; it can be done simply by utilizing those very forces of nature and the very destructive wastefulness of man that seem to the casual observer to be both hopelessly inimical to the fish-supply.

17. The instance it is repeated is pregnant with instruction as indicating that not only opponents of pisciculture, but also its supporters, have but slight conception of what can be done till some one with special aptitude is allowed to devote his whole time to the inquiry; in short, till the Government is pleased to constitute a fishery department to check the wholesale waste, and to study the means of increasing this source of food-supply.

18. There remains another distinct class of canals of which there is a large mileage in the Madras Presidency, to wit the canals which, from being connected with the sea by intersecting estuaries, are in the dry months more or less brackish. These support a distinct class of fish which need perfectly distinct treatment. Enough is known on these subjects to warrant the assertion that greatly improved use can undoubtedly be made of these extensive areas. But there is also obviously room for more special study, and this would naturally follow the constitution of a fishery department. The fact also that the canals of India are together more than 28,000 miles in length should suffice to show that the question of their utilization in increasing the food-supply is one of such magnitude as to make proper inquiry an imperative duty.

19. In the above remarks the Board have endeavoured to meet the drift of the Government of India questions; but some seem still to need categorical answers. It is asked if sufficient information is available regarding the demand for the supply of fish. The answer may be readily found at page 386 of "The Rod in India," 2nd Edition, and a trifle more fully in an enclosure to G.O., dated 27th November 1883, Nos. 216, 217, Legislative, page 15, paragraph 40: "Taking the last census report and going very carefully through the castes, I find that more than 90 per cent. are of castes that may and do eat meat when they can get it. The total population of the Madras Presidency including the Native States of Mysore, Travancore, Cochin and Pudukóta is given as 39,565,777. Of these, 35,903,807 are meat-eaters, which is a proportion of 90·7." The details of this calculation have been twice put prominently before Government officially, once in a paper submitted to the Famine Commission entitled "A proposal for making Indian fisheries a means of alleviating Indian famines" which, being shelved, it was reprinted at private cost in "The Rod in India," chapter XXVI. The calculation was again put forward in a Fishery Bill drawn by the same officer in 1883, enclosure XI, page 124. The proportion of meat-eaters in Northern India must be still greater than in Southern India; but the same percentage being applied, no one could possibly contend that the present fish-supply was equal to the demand of 90 per cent. of about 254 millions of people.

20. The fish-curing operations of this Presidency afford another indication of the demand being immeasurably in excess of the supply, advance as rapidly as the supply may. In 1876, when fish-curing yards were first open in this Presidency, only 324 tons of fish were cured in the year, whereas in the 12 months ending with September 1886, 28,353 tons of fish were cured. The results of each year nearly doubled the results of the previous year till in the last six months of 1886, as compared with the similar season of the previous year, there was an advance of 957 tons of fish cured. The latest returns are that 33,642 tons were cured in the six months ending 30th September 1887, and yet the increased supply has not been accompanied by any fall in price, but rather by an advance in price in consequence of an improvement in quality.

21. The next question has reference to "the causes which may be at work to diminish" the fish-supply, and it has already been said generally that the information available is more than enough to justify legislation. To answer categorically in greater detail would be to repeat all that has been officially reported in ample detail in the last 20 years. Allusion has been made above to several reports in which the information can be found, and additional marked detail of destructive wastefulness has been adduced in the extract from a recent work. It will probably suffice therefore at this date to summarize the causes of wasteful destruction in the briefest terms. They are wholesale capture of fry when of a size so minute as to be practically valueless; poisoning rivers so as to destroy all animal life in them including even the minutest fry, and the food of fish; using dynamite to the destruction of everything that swims including the spawners; using fixed engines everywhere for the capture of fish ascending to spawn and of the young descending to migrate; using nets with such small meshes that nothing is left to grow and restock the waters; never giving any close time.

22. That fixed engines are incomparably more destructive of fish life in India than they are in England, because Indian fish are more migratory than English fish, may be gathered from the following extracts from "Tank Angling in India," which is quoted because it is a source of information not officially before Government, as well as because it is recent :—

"Properly to appreciate the facilities existing in India for the capture of the fry of all sorts of fresh-water fish we should stop a moment to eliminate preconceptions based on English fish knowledge. The salmon we know annually ascends rivers for the purpose of spawning. It has its exact parallel in India in the hilsa. These two are sea-fish seeking fresh waters for the purpose of spawning, and are classed as anadramous fish or fish that have an upward course. None but sea-fish are in England anadramous. But here in India fresh-water fish as well as sea-fish are highly migratory. As shown in *The Rod in India*, mahseer are migratory within certain limits. In flood-time they ascend to smaller streams which, when the floods are over, will dwindle to dimensions suitable to the strength of their diminutive fry. The fry cannot live for ever in these shallow streams; when they grow therefore they too must migrate to larger waters. And so the fry of mahseer are exposed to capture as tiny fry in fixed basket-work traps set in every rivulet.

"Other Indian fish migrate for again another reason. The marked alternations of drought and rainy seasons makes the rivers in the tropical east at one time an arid sandy bed for months and miles together, and at another time a flood that covers the country with sundried areas suddenly converted into extensive lakes. If Indian fish had not an intensely migratory spirit, whence would all these areas of arid sandy beds and sun-baked hollows be peopled with fish life? If Indian fresh-water fish were like English fresh-water fish, such places must remain barren of fish. But with fresh-water fish of all kinds imbued with an intense spirit of migration, no sooner do the rising floods render change of place possible than they are possessed with a perfect *furor* to migrate in millions and millions with all their possible power. It is marvellous to see them busily migarting as if their very lives depended on it, as doubtless they do. Doubtless there would be no food for the teeming millions of fry if they were confined to the limited areas in which they were hatched. Hunger, the grand motor, is doubtless the power that drives them to migrate. It is as fry that they migrate for food, not as in England as parent fish for spawning. It is not to seek the sea as salmon par do; it is only to find fresh fields and pastures new in which they may obtain more food. Food, food, food is their cry as in countless hosts they hurry down the swelling flood."

* * * * * * * * *

"Indian fish, living as they do in tropical rivers, that are alternately a flood, a moderate stream, and a dry sand bed, accommodate themselves to the position by being much more migratory than the fish of Europe, and to allow of their being migratory their commissariat is also migratory."

23. The wasteful, essentially wasteful, destructiveness of these fixed engines is reduced to appreciable figures in the quotation made in paragraph 15, *supra*.

24. With reference to the possibility of increasing the fish-supply, it need only be said that if wasteful destruction is checked, and legitimate utilization alone allowed, the increased supply will leap to life of its own accord. It may also be aided as shown at the close of paragraph 16, *supra*.

25. It may be added, in elucidation of remarks made in paragraph 9, *supra*, that knowledge of English fish does not necessarily imply knowledge of Indian fish. On this subject "Tank Angling" may be again referred to, page 114—

"To make such a wholesale proposition is to ignore the peculiarities of the east and to presume, without inquiry, that Indian fish similarly ignore the peculiarities of the waters of their birth. The habits of western fish would not suit them at all, and we too must diverge from western practice if we wish to cultivate the fish of the east."

* * * * * * * * *

"Even an ordinary English expert could scarcely be expected to know it and calculate for it; and, therefore, it is important that here in India we should not be judged in all respects by English piscicultural knowledge, nay, nor even by American, for I believe they have no frogs. But every naked Indian fisherman knows it,* though he may not have thought it out in sequence."

* *I.e.*, the migratoriness of Indian fish.

26. In connection with the second paragraph of the Government of India letter, it may be suggested that the lines on which the Bill should be drawn would be matter for consideration. In such a vast empire as India it would seem that they should be assimilated to the general principle of the United States in which each state, it is believed, is secured autonomy, aided by one central scientific commissioner and staff. The English system of dependence on local committees is obviously inapplicable to a country in which the local native committees have

generally very limited, if any, special knowledge of the subject; and while, for the sake of economy, as well as of avoidance of additional friction, every existing Revenue, Magisterial, Police and Forest Department of Government should be utilized to the utmost, still fully busy Commissioners and Collectors with no special knowledge or aptitude would need some such scientific advisers as are found necessary in Forestry. The provisions of the Bill should, it is suggested, be so drawn as to admit of progressive application when the surroundings showed that they were workable and acceptable, for some localities might, under happy influences, be much more advanced than others.

27. It is observed that the Government in their Order, dated 27th November 1887, No. 7944, forwarding the earlier inquiry of the Government of India, speaks of a general Fishery Bill for the Madras Presidency. It is presumed that any such Bill would require the sanction of the Government of India before it could be enacted and utilized, and would entail nearly as much labor both to that Government and to this as the passing at once of one general law for all India. At the same time a Bill suitable to the Madras Presidency alone could hardly be adopted for Northern India also, as it might well prove incomplete. It might well be that their very first rivers, the Hoogly and the Indus, needed special treatment, and that their extensive canal systems had their own peculiarities, for legislation has to be made suitable not only to the fish, but to the practices of the local fishermen.

28. There is a general undefined objection to the constitution of any new department because of the immediate expense whatever may be the promise of ultimate return. It seems pertinent, therefore, briefly to remark here that this objection cannot fairly be taken to the constitution of a fishery department, for it needs only its own funds. From the commencement of the British rule in India fisheries have always given, and to this day are still giving, an income which has been absorbed into the general revenues without any return outlay whatever being made on their development, whereas if the existing and prospective fishery revenues were for a few years appropriated, as in common fairness they should be, to their own development, the time would very soon arrive when they would yield an income so far in excess of all their own requirements that the surplus handed over to swell the general revenues would be a hundredfold its present figure. Witness the annual yield in 1883 of from 12 to 13 lakhs of rupees from the Burma fisheries, and the value of fisheries in other parts of the world computed as worth 40 million pounds sterling a year to the fishermen themselves and probably more than 160 millions sterling to the public collaterally employed and advantaged, for the direct profits of the actual fisher folk are always kept as low as possible. This point may be found treated in some detail in the preface to the Fishery Bill submitted to the Madras Government and forwarded to the Government of India in G.O., dated 27th November 1883, Nos. 216, 217, Legislative.

MADRAS FISHERIES BILL.

ACT OF 1888.

An Act to regulate Fisheries in the Madras Presidency.

WHEREAS the exclusive right of the fishing in the Madras Presidency in all fisheries not hereinafter excepted belongs by the custom of the country to the Government; Preamble.

And whereas it is expedient to provide for the protection of this right, and for the improvement of the fisheries, and for the collection of such revenues as may be required;

And whereas it is further expedient to afford legal protection to private fisheries hereinafter excepted;

It is hereby enacted as follows:—

I.—PRELIMINARY.

Short title. This Act may be cited for all purposes as the Madras Fisheries Act, 1888.

Local extent. 2. It extends to the territories for the time being under the administration of the Governor of Fort St. George.

Commencement. 3. It shall come into operation on the day of 1888.

Interpretation clause. 4. In this Act,

"Fish." 5. "Fish" includes also shellfish and turtles and their eggs.

"Fishery." 6. "Fishery" means any collection of water, running or still, tidal or non-tidal, in which fish may be found. It includes the sea.

"To fish." 7. "To fish" means to catch, kill, injure or endeavour to catch, kill or injure fish.

"Weir." 8. "Weir" shall mean any erection, structure or obstruction fixed to the soil, either temporarily or permanently,

across or partly across any flowing or tidal water so as to obstruct the passage of fish or to facilitate their capture.

"Fixed engine." 9. "Fixed engine" means any fixed implement or engine for catching or for facilitating the catching of fish, and includes a net secured by stakes, or by anchors or otherwise temporarily fixed to the soil, and includes all things used for making them stationary.

After English Bill. 10. Strokehaul or snatch shall mean any instrument or device, whether used with natural or artificial bait, rod and line, or otherwise, for the purpose of foul hooking any fish.

New. 11. Private fisheries shall be of two classes—

I. Those that are at no time by overflow or otherwise in any connection with any other fishery.

II. Those that whether or not they are disconnected from every other fishery during the dry season, are during flood time or at any other time by overflow or otherwise, so connected with any other fishery that the passage of fish to or fro between them is possible.

Private fisheries belonging to Class I shall be termed exclusive private fisheries.

Private fisheries belonging to Class II shall be termed ordinary private fisheries.

Imprisonment. 12. "Imprisonment" shall mean imprisonment of either description as defined in the Indian Penal Code.

13. "Person" shall include any body of persons corporate or incorporate.

II.—RIGHTS OF FISHERY.

Private rights. 14. Private fisheries shall consist of such as (*a*) have been created by an express grant of a right to fish heretofore made by the British Government:

(*b*) or have been constructed at the cost of the owner wholly within land which is the property of the owner:

(*c*) water flowing through land which is private property shall not be a private fishery unless the property in land shall have been accompanied by an express grant of fishery as aforesaid:

(*d*) and water flowing through zemindari or other like private property in land shall without any express grant of fishery as aforesaid, constitute a private fishery if the fishery rents have been credited to or amalgamated with the private income of the said property; but such rights of fishery can be redeemed by repayment of the amount so credited.

After Burma Act.

15. Such private fisheries excepted, no right in any fishery or to fish therein shall be deemed, any local Act notwithstanding, to have been acquired by the public or by any person, either previously to the passing of this Act or subsequently thereto, except in one of the modes hereinafter described:

Right of fishery.

But nothing herein contained shall be held, nor shall the giving of any lease, license or permission under this Act be held, to prevent the public from angling with a rod and line only in any fishery not excepted as private.

Proviso.

Ditto.

16. The owners of exclusive private fisheries shall have the right to prosecute for offences committed against them under section 21, clauses (*a*) to (*i*) inclusive, but in respect of those fisheries shall not themselves be liable to any penalties or other provisions of this Act.

They shall be liable to the payment of quit-rent if the Local Government so direct.

New.

17. The owners of ordinary private fisheries shall have the right to prosecute for offences committed against them under section 21, clauses (*a*) to (*i*) inclusive, and shall themselves be subject in their own fisheries to only the provisions of section 20, of clauses (*b*) to (*i*) inclusive of section 21, and of clauses (*a*) and (*e*) to (*i*) inclusive of section 23 of this Act.

They shall be liable to the payment of quit-rent if the Local Government so direct.

After Burma Act.

18. The Collector of the district may, subject to such rules, conditions and restrictions as may be prescribed by the Governor in Council in this behalf, dispose of the right of fishing in any fishery, not being an excepted private fishery, in any of the following modes, that is to say—

(*a*) He may declare such fishery open to the public, or to the inhabitants of any town or village, or to any other class of persons;

Ditto.

After Burma Act.

(*b*) he may lease the exclusive right of fishing in such fishery to any person; or

Ditto.

(*c*) he may, where he has not disposed of the right of fishing in any of the foregoing modes, grant licenses to any number of persons to use nets, traps or other implements for fishing in such fishery;

Ditto.

(*d*) he may grant the right to dispose of such fishery under clause (*c*);

Ditto.

(*e*) he may declare that any fishery shall cease to be a fishery for the purposes of this Act;

Adapted from the Burma Act.

(*f*) he may by notification put up on the spot or issued in the District Gazette of the district in which such fishery is situate, prohibit for such time as may be fixed by such notification the public right of angling with a rod and line only in any fishery not excepted as private;

Accepted by the majority of the Delhi Conference.

(*g*) he may order the erection, repair, alteration, or maintenance of a fish ladder or pass for fish or for navigation;

New.

(*h*) he may acquire any ordinary right of private fishery in the manner prescribed by the Land Acquisition Act, 1870;

New.

(*i*) he may in like manner acquire and cause to cease any time-established right of user to injure any fishery by permitting the flow or putting of poisonous matter from any industry.

New.

19. All fees, rents and other moneys due to Government in respect of any lease, license or permission granted under this Act may be recovered in the manner prescribed by the law for the time being in force for the recovery of the arrears of land revenue.

III.—Erection of Weirs.

Accepted by the majority of the Delhi Conference, and after Burma Act.

20. No weir, or other fixed obstruction, and no fixed engine tending to hinder the movements of fish, or to interfere with the flow of the water, or to impede navigation, shall be erected, placed, maintained, or used in any fishery, or in waters connected with any fishery by a grantee or lessee, or by any other person whom-

Weirs not to be erected without sanction of the Collector.

soever, without a special permission in that behalf under the hand of the Collector of the district in which such fishery is situate.

Nothing shall prevent the Collector of the district from modifying or revoking such permission at any time.

IV.—PENALTIES.

21. Any person who commits any of the following offences, namely—

(*a*) Fishes or causes to fish, or prevents or attempts to prevent fishing in any fishery not having a right to fish or to prevent fishing therein;

(*b*) erects, places, maintains, or uses any weir or fixed engine in a fishery, or in waters connected therewith, without being specially permitted to do so under section 20;

(*c*) refuses or neglects to comply with a lawful order to erect, repair or maintain a fish ladder or pass for fish or for navigation;

(*d*) diverts or bails out any fishery for the purpose of catching fish;

(*e*) puts or knowingly permits to be put, or causes or knowingly permits to flow, into any fishery any solid or liquid matter to such an extent as to stupefy, sicken or kill fish, or has poisonous substances in his possession under such circumstances as to satisfy the Court before whom he is tried that he intended to use or to cause them to be used for stupefying, sickening or killing fish;

(*f*) uses, or has in his possession, any dynamite or other explosive substance under such circumstances as to satisfy the Court before whom he is tried that he intended to catch or destroy fish in any fishery;

(*g*) fishes otherwise than with a rod and line or strokehauls or snatches within one hundred yards of any weir;

(*h*) fishes with a net having meshes of less dimensions than those authorised in the rules made under this Act, or places two or more nets behind or near to each other in such manner as shall practically diminish the mesh of the nets used, or covers the nets

Additional.

After the Burma Act.

Accepted by the majority of the Conference.

Ditto.

Postponed by the Delhi Conference for further consideration.

Accepted by the majority of the Delhi Conference.

Ditto.

New. See Objects and Reasons.

used with canvas, or uses any other artifice so as to evade the provisions of this section;

(*i*) wilfully and without lawful excuse injures or removes a grating, or authorised engine, or interferes with a fish pass;

(*j*) fishes for, or wilfully or negligently disturbs the beds of pearl oysters or chanks within twelve miles of shore at low water-mark within such limits as may, from time to time, be prescribed by the Governor in Council by notification published in the *Fort St. George Gazette*;

(*k*) within the said limits is found in possession of a dredge or other instrument suitable for the capture of oysters or chanks or is found in possession of oysters or chanks within the said limits, otherwise than under the orders of the Collector of the district, or aids or abets the concealment thereof;

(*l*) being master or person for the time being in charge of any boat or other vessel found within the said limits anchoring or hovering, and not proceeding to her proper destination as wind and weather may permit, unless such boat or other vessel shall have been forced into the situation aforesaid by accident or other necessary cause;

shall be punished, for a first offence, with imprisonment for a term not exceeding three months, or a fine not exceeding 200 rupees, or both;

and, for a second offence, with imprisonment for a term not exceeding six months, or a fine not exceeding 500 rupees, or both;

and any weir or engine erected, placed, maintained, or used in contravention of section 20 of this Act and any fish taken by means of such engine or weir, or otherwise, in contravention of this Act, or of any rules made hereunder, and for the time being in force, shall be forfeited;

and such weir or engine may be removed or taken possession of by the Collector of the district or such person as he empowers in this behalf;

and the expense, if any, of such removal may be recovered by the Collector of the district from the persons erecting, placing, maintaining, or using the weir or engine so removed, as if it was an arrear of land revenue;

In modification of Ceylon Regulation XVIII of 1843.

See Ceylon Regulation III of 1811.

Burma Act.

Ditto.

After Burma Act.

Ditto.

and it shall be lawful for any person or persons authorized for the purpose by the Collector to enter and seize any boat or vessel referred to in clause (*l*) and carry the same, with all persons or things therein, to some convenient part or place in the Madras Presidency for prosecution; and every such boat or other vessel shall be liable to forfeiture.

This is sufficiently vague

22. Provided that no person shall be subject to any penalties under clause (*e*) of section 21 if he satisfy the Court before whom he is tried that the act done is in exercise of any right to which the person is by law entitled, and that he has used the best practicable means within a reasonable cost to render harmless the liquid or solid matter so permitted to flow or to be put into the water.

Saving of rights.

Adapted from English Bill.

Provided also that in the event of his so satisfying the Court before whom he is tried the Collector shall, if it be reasonably practical for him to do so, cause the poisoning to be rendered harmless, and shall apportion the share of the expense thereof to be borne by, and the sum to be paid by Government to, such person for the damage, if any, done to his property; and the Collector's decision shall be final.

Collector to render poison harmless.

Provided that if the award made in this section is made by any officer subordinate to the Collector of the district, an appeal shall lie to the said Collector within one month from the date of the award, and the said Collector's decision shall be final.

Right of appeal.

V.—Rules.

23. The Governor in Council may, from time to time, make rules for all or any of the following purposes:—

Accepted by the majority of the Delhi Conference.

(*a*) for the survey and demarcation of the limits of fisheries;

Burma Act.

(*b*) for determining in which of the modes mentioned in section 18 the right to fish in each fishery shall be disposed of;

See remarks against section 18.

(*c*) for regulating the conditions on which, and the procedure by which, fisheries may be opened to the public, or granted or let on lease to individuals;

Ditto.

See remarks against section 18.

(*d*) for fixing the rates at which, and the conditions on which, permits to use implements for fishing may be granted;

Accepted by the majority of the Delhi Conference.

(*e*) for settling the terms and conditions on which permission to erect, place, maintain, or use weirs and fixed engines in fisheries or waters connected therewith may be granted;

Ditto.

(*f*) for compelling the owner thereof to make, alter or maintain in good working order free gaps or fish ladders in weirs; or for authorising the Collector to do the same and to charge the cost thereof to the owner;

Postponed for consideration by the Delhi Conference.

(*g*) for regulating the size of the mesh of nets to be used in any fishery, other than excepted private fisheries;

New. See reasons.

(*h*) for fixing close times;

Accepted by the majority of the Delhi Conference.

(*i*) for reserving stock pools in rivers;

Burma Act.

and generally to carry out the purposes of this Act.

24. The Governor in Council may, in making any such rule, attach to the breach of it, in addition to any other consequences that would ensue from such breach, a punishment, on conviction before a Magistrate, not exceeding one month's imprisonment, or two hundred rupees fine, or both.

Ditto.

25. All such rules shall be published in the *Fort St. George Gazette*, and shall thereupon have the force of law.

New.

General Provisions.

26. It shall not be competent to any Civil Court to entertain any suit regarding the amount of any tax, license, fee, rent, damage, penalty or liability levied or adjudged under this Act.

Bar of suits in Civil Courts.

Total jurisdiction?

27. All fines and charges imposed under this Act may be recovered in the manner provided in the Code of Criminal Procedure 1882, or other law for the time being in force and shall be credited to fisheries.

Recovery of fines.

28. Every prosecution under this Act may be instituted before any Magistrate who has jurisdiction over the offender.

Prosecutions under this Act.

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fro 25.2.88 2n 175
fro 29.6.88 2n 3893
a.g.3.88 2n 201-202

(1888.)

REVENUE DEPARTMENT.

No. 4893

From H. S. Thomas Esq
1st Member Board of
Revenue

Dated 11
Received 20 Sept
Enclosures

No.

SUBJECT.

Submg a Note
Bill for Madras Pres
to be with a Statement
of objects &
Reasons

C 5/12

C 25/2

51

51

Ootacamund Club
Nilgiris
15th September 1888.

H. S. Thomas Esq
Senior Member Revenue Board
Madras Presidency.

Dear Sir

Captn Callan of Lyanmilly,
Mr St. P. Hodgson, Mr W.C. Edmiston, and I have
returned from a week's fishing on the Bawani River.
We fished from early morning to evening. 4 rods
for a week. We fished about 16 miles of the River
from above Palagum Village to near Chengal.
We caught including Cornetta Carpio, Mural,
and 4 Mahseer altogether 207 fish weighing
in the aggregate 221 lbs.

We eventually gave up trying, as on the
last day, below Mr Patersons fibre factory, we

No 26·2·88 Vol 175

we did not catch a single fish.

I have been asked by the above named Gentlemen to write to you and say, there is no question that the district is absolutely poached out and denuded of fish and game by the Mopahs. In regard to the game, we only heard & spotted one Peacock three times - a Jungle fowl once and nothing except pigs (a few) and two fish we saw by day hundreds and in some cases two in one case a "pair" American line!! We saw every fish pass full of basket weirs.

Even Kuttee the old Oracle boatman who has been on the River for years told Mr Hodgson he considered the Mopahs had destroyed nearly all the fish in the River

53

53

His Barony time was one of the greatest times in the world for fish, and would be worth thousands of pounds a year to let if in Great Britain. As a question of food supply alone the matter is well worth consideration.

The 4 Brahaes caught weighed 31 lbs, 10, 9 and 6 lbs respectively, that is to say only one good fish to 4 rods in a weeks fishing.

We all hope you will be able to table the matter use, and lay it before the Madras Government.

I am yours truly
(signed) W.S. Symons.
(Line copy)

D.O.

A Secretary to the Commissioners of Land Revenue.

Well

C 25/3

No 26.2.88 2 (—

REVENUE BOARD OFFICE MADRAS

Proceedings of the Board of Revenue

(Land Revenue).

Dated 24th September 1888.

No. 821 Pub.:

H. S. Thomas Esqre. M.C.S. F.R.S.

Read

Resolution:—

The enclosed communication will be submitted for the information of Government.

The testimony of intelligent European observers is that for 16 miles of the Bawany, a most important fish producing river of the Presidency, they "saw every fish brass full of basket metre." Such systematic capture of the fry of migratory fish must tend to deplete any river. The Bawany is a river that was

V. Ofull

Received 1888

C 25/3

full of Mahseer, and was known to rear them to weights of 50, 70, 90 and 100 lbs each. The Mahseer being a highly migratory fish may well have suffered specially, as the writers think, from these fenced engines in which their fry would be liable to be caught and destroyed at the immature weights of a few drachms each. The wastage of food supply in such destruction of immature fry is too apparent to need further Comment.

The localities mentioned lie all in the Merkanad Division of the Nilgiri District and might be supposed to come under the protection of the Nilgiris Game and Fish Preservation act 1879, and as regards Game they doubtless do so, but as regards fish that act is powerless to help them, as it is limited to non-indigenous

fish

fish, so that the Mahseer, a finer fish than any non-indigenous fish that could possibly be introduced into that river is wholly unprotected by that act.

The opposite side of the river lies in "reserved forest" and section 26 (f) of the "the Madras Forest act, 1882" gives the Governor in Council authority to make rules to "regulate, prohibit hunting, Shooting, fishing, poisoning water and setting traps or Snares." The act however appears to be a dead letter seemingly because the river is treated as a "boundary" which is the term used in the Government Notification, in G.O. dated 16 Oct 1885, No 1169.

The Fishery Bill submitted to Government on the 11 July 1888 makes full provision for meeting the case,

and

Fro 2
Fro 2
a.g.

and in the papers accompanying that Bill it is shown how populations far down a rivers are influenced in their food supply by imprudent destruction carried on at its source. The Bawany is the main source of the Cauvery and Coleroon which flow through the closely populated districts of Coimbatore, Salem, Tanjore and Trichinopoly, and the fisheries engines referred to affect many other valuable fisheries. Inhabitants

From a food supply point of view the Board consider the subject one of large significance.

(True Extract)

..... Secretary.

The Secretary to Govt. R.D. with Copy of D.O.

Ltr

Revenue 188[illegible]

Board of Revenue

(Land Revenue)

MADRAS.

No. 6628.

To

The Secretary to
Government
Revenue Department

No. 628 Jr.

GOVERNMENT OF MADRAS
25 SEPTEMBER
REVENUE DEPARTMENT

Proceedings, dated 24 September 1888,
No. 821 Misc. / Routine. Enclosures. 1

Subject.

Submitting for the information of Government with remarks, D. O. from Mr. W. S. Symons, Collector — Canoor, bringing to notice that the Bawani River is denuded of [illegible] by the Inspks.

No 285 M

Office of the Chief Engineer for Irrigation
Cotacamund 8th August 1888

From

Colonel H. R. Mead R.E.
Chief Engineer for Irrigation

To

H. S. Thomas Esqre
Commissioner of Land Revenue

Sir,

With reference to the orders of Government regarding Fish ladders Locks &c. that have been proposed to be built at the Lower Coleroon Anicut (the last by Obing No 298 I. dated 14th May 1879) and the correspondence that has been carried on afterwards I have the honor to inform you that as far as I can understand from the papers the officers of this department have not seen their way to design a Lock Conformable with your proposals as you have not been in a position to state definitely what is required

2 The last communication from you on the subject is a letter dated 5th February 1880 and in that letter you state that you have never seen Sir Wilsa and again you express your opinion that it will be useless for measures to be taken to get the Hilsa over the anicut unless something is

2

is done with regard to attending to the fry above the anicut

3 As more than 8 years have elapsed since you wrote this probably now you are in a position to state more definitely what you would propose and I request that you will do so at your earliest convenience, and on the receipt of your letter, I will do my best to meet your views on this important subject.

I have &c

(Signed) H. R. Mead Colb RE.
Chief Engineer for Irrigation

No 33.W

True Copy forwarded to H Stuart Esqre
Under Secretary to Government Revenue Department

Chepauk
9th October 1868

R Bourdon
For Chief Engineer for Irrigation

X. B.R.

25/3

E. I. Form No. 3.

Former Cases.

No. dated 188 .
" " 188 .
" " 188 .

Later Cases.

No. dated 188 .
" " 188 .
" " 188 .

Printed in P.M.G., No. dated

Reminders received.

No. 1, dated 188 .
" 2, " 188 .
" 3, " 188 .
" 4, " 188 .
" 5, " 188 .

Keep-withs.

4

Revenue 1888 Oct. No.

From

The Chief Engineer for Irrigation,

To

The Secretary to Government

Revenue Department

No. 7001

SECT. GOVT. MADRAS 19 OCT 88 RECEIVED

No. 33-W

Dated 9. 10. 88

Despatched

Received 10 Oct.

Enclosures.

Subject.

Forwarding Copy of Memo No. 2.005 dated 8th August 1888 from the Chief Engineer for Irrigation regarding fish ladder to be constructed in the North Branch of the Lower Coleroon Anicut.

REVENUE BOARD OFFICE MADRAS

Proceedings of the Board of Revenue.

(Land Revenue).

Dated 31st December 1888.

No. 7109 Mis.

The Honorable J. Grose Esq. A.

the following letter from the Collector of Nilgiris, dated 22nd October 1888, No. 454.

With reference to para 3 of the Board's Proceedings dated 24th September 1888, No. 821, I have the honor to state that the places specified in Mr. Lyons' letter, namely Palagur and Chengal are not situated within the limits of Merkumaad division, though they appear to fall within the jurisdiction of the Game Act.

2. The Southern boundary of Merkumaad runs along the slopes, a considerable distance above the places named.

3. This

3. This boundary has been adopted for the purpose of Revenue Administration, and all the lands beyond that boundary, the places above mentioned and the river Bhavani belong to Coimbatore District.

4. The Schedule District Act II of 1879. (Madras) constitutes the Northern bank of the Bhavani as the boundary for the purposes of game preservation and the river itself is excluded from its scope.

5. This fact was considered in G.O. dated 25th November 1884, No. 2540, Public, by which a notification was ordered to be published with a view to protect acclimatized fish in certain streams and lakes situated within the limits of the Game Act.

Resolution:—

Submitted to Government, with reference to para 3 of Board's Proceedings, dated 24th September 1888, No. 821.

The

2. 69 The fact now reported does not affect para 5 of those Board's Proceedings.

/True Copy and Extract/

Acting Secretary.

To

The Secretary to Govt. R.D.

Copy Collector of the Nilgiris

" " of Coimbatore.

with copy of G.O, 25-11-1884, No. 2540 Public.

33

G.O. 24-9-88 no 821
Govt 5-11-84 no 2540
Act II 1879.

Revenue 1888. 4 Dec 1888.

Board of Revenue

(Land Revenue),

MADRAS.

No. 8436

To

The Secretary to
Government
Revenue Department.

Rd 5 Dec.

Proceedings, dated 3rd December 1888.

No. 7109 Mis. ~~Routine~~ Enclosures.

BOARD OF REVENUE
5 DEC 88
REVENUE DEPARTMENT

Subject

Submitting to Govt,
with remarks, a letter from
the Collector of Nilgiris
informing that certain plan-
of the Bhavani river which
are denuded of fuel as
reported by Mr. Sequeira
in his letter to Mr. H. S.
Thomas do not belong
to his district.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Print order & letter

Read Con. 4893/88.

Abstract Con. 6628/88
Con. 7001/88
Con. 8436/88

Order of 7 April 1891, no: 270

The draft Fishery Bill
for the Madras Presidency,
submitted by Mr. Thomas, late
First Member of the Bd of Rev,
as in the first of the above
papers, has been allowed
to lie over pending the decision
of the Govt of I upon the draft
Indian Fishery Bill, which was
forwarded to it with letter no. 3223
dt. 3 Sept 88. No intimation
having as yet been received
from the Supreme Govt as
regards the manner in which

30/3/91

Vide
6 abve.

this Bill has been dealt-
with, H.E. the Governor reserves for
address to the G of I upon
the subject.

2. The importance
of fish ladders and lock
at the large anicuts has
on several occasions been
recognized by Govt, but
it does not appear that
that any steps have been
taken in recent years to
further this construction.
This matter should now be
considered in the P.W.
Dept. vide Govt of India
G.O. 1629. dd 23. June. 73. P.W.D.
that the closure of the
fish ladder at the Kistna
Anicut was ordered and
instructions were issued
for the conversion of the
of the under-sluice vents
into a fish lock. Again in
G.O. 298. I. 14. May. 79. P.W.D.
plans & estimate for a fish
lock at the Lower Coleroon
Anicut were called for.
The records of the depart-ment
do not show whether these
orders were complied with,
and if so with what results.

3. The following
letter will be despatched
to the G of I.

Rm
6. Jan. 81.

To the Commrs of C.R.
" P.W.D.
Copy to the Legislative Dept.

65/5

To the Govt of India P.W.
(Irrigation) for favour of
Communication.

66

Fishery Bill -

The Hon. Rt Hon. the
Cs!
The Under Sec. of State
C.

The Sec. to the Govt. of Bo.
(Judl. Branch) with the fav.
of comments in this Office

25/

No 271
7-4-91

Letter to the
Sec. to Govt. of Mad. Rev. & Agric.

Letter despd.
28/4/91
Mme.

late Jt. Secy
member of
the Bd of Rev.

Sir

I am directed to
invite your attention to
my letter no. 5223 dated
3rd Sept. 88 forwarding the
draft of an India Fishery
Bill drawn up by Mr H.S. Thomas,
and to enquire whether
any action has been taken
in the matter by the Govt.
I am to say that a draft
Fishery Bill for the Madras
Presy has been under the
consideration of this Govt
since the date of my letter
above quoted, and that
Govt. the Govt of C. has deferred
[steering the same before the
Legislative Council pending
the decision of the Govt of
the Madras Bill for the
whole of India.

I dont but think the
thing might well sleep
for another ten years.
Mc
31 Mar.

Left
30/3/91

Rec'd
31 Mar.

further steps

2. I am further to enquire whether in the opinion of the Govt. it is within the power of the Local Govt. to legislate for fisheries in the sea, and if so within what limit from the shore.

Rm
6. Mar. 91.

G. 6. 7-4-91 nos. 270 & 271

7TH APRIL 1891, No. 271, REVENUE.

REVENUE DEPARTMENT.

From

C. A. GALTON, Esq., M.A., C.S.,
Secretary to the Government of Fort St. George,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
REVENUE AND AGRICULTURAL DEPARTMENT,

Dated Ootacamund, the 7th April 1891.

SIR,

Miscellaneous.

I am directed to invite your attention to my letter, No. 5223, dated 3rd September 1888, forwarding the draft of an India Fishery Bill drawn up by Mr. H. S. Thomas, late First Member of the Board of Revenue, and to enquire whether any action has been taken in the matter by the Government of India. I am to say that a draft Fishery Bill for the Madras Presidency has been under the consideration of this Government since the date of my letter above quoted, and that His Excellency the Governor-in-Council has deferred further steps pending the decision of the Government of India on the Bill for the whole of India.

2. I am further to enquire whether, in the opinion of the Government of India, it is within the powers of the Local Government to legislate for fisheries in the sea, and if so, within what limit from the shore.

I have the honor to be,
Sir,
Your most obedient servant,

(Signed) C. A. GALTON,
Secretary to Government.

Ed. A. Aubert.

60 Copies.

1891.

REVENUE AND AGRICULTURAL DEPARTMENT.

From the Government of
Fort St. George.

Issued

Recd. *Encl.*

Letter, dated 7th April 1891,
No. 271.

APRIL.

ENQUIRING whether any action has been taken regarding the India Fishery Bill and whether, in the opinion of the Government of India, it is within the powers of the Local Government to legislate for fisheries in the sea, and if so, within what limit from the sea.

REVENUE DEPARTMENT.

FILES CONNECTED WITH G.O. Nos. 270-71, REVENUE, DATED 7TH APRIL 1891

From H. S. Thomas, Esq., F.L.S., F.Z.S., First Member, Board of Revenue, dated 11th July 1888.

[SUBJECT.—*Draft Fisheries Bill.*]

With reference to the current Mr. Thomas forwards the draft Fisheries Bill for the Madras Presidency which he was directed to draw up in P.O. No. 175, dated 28th February 1888. It is submitted at once as it is thought that the Honourable Member may like to discuss the matter with Sir Edward Buck. It is not known whether the Government of India propose to legislate for the whole country: if they do it is obviously unnecessary to proceed with a local Bill.

I have read these papers but with a note to be prepared showing the present state of the question. The scope of Mr. Thomas' Bill and how far it carries out or can be made to carry out the proposals of the Delhi Conference, and how far it goes beyond them. The Bill itself does not seem to contain very much. The string of the papers is in Mr. Thomas' letter and his wonderful objects and reasons.

H. E. S[TOKES]

There is no spare copy of the draft so a detailed note on it cannot be drawn up until the copy sent herewith is returned. It would, it is thought, be well to inform Collectors and others of the opinion of Government on the Bill before forwarding it to them for an expression of their views.

H. A. STUART.—24-7-88.
C. A. GALTON—24-7-88.

The first paper in the file on this subject is dated 11th September 1867 and is an order of Government directing the Collectors of Gōdāvari, Kistna and Tanjore to report on the stoppage of the hilsa or sable fish at the large anicuts, and its capture there. Very shortly after this a despatch was received from the Secretary of State for India enclosing copies of letters on the same subject from Colonel Haly and Sir Arthur Cotton, and these papers were also communicated to the above Collectors, to the Collectors of South Arcot and Nellore and to Dr. Day. The replies showed that in all the great rivers which flow out on the East Coast there are one or more kinds of valuable fish which, entering the rivers from the sea for the purpose of spawning, are stopped by the anicuts, and there caught in vast numbers with the roe in them. This diminution of the food supply of the people was deemed worthy of the attention of Government and they accordingly deputed Dr. Day to enquire and make a comprehensive report on it (G.O. No. 1468, dated 27th May 1868). On hearing of Dr. Day's deputation the Government of India asked that he might be allowed to visit the rivers on the Orissa Coast also and that he might be instructed to direct his attention to the practical aspect of the question, i e, how far the food supply of the people was being affected by the injury to fish which it was alleged was being caused by anicuts and other irrigational works. Instructions in this sense were issued to Dr. Day (G.O. No. 2151, dated 12th August 1868), and he submitted

G.O. 2140, 11th September 1867.

G.O. 2348, 7th October 1867.

three reports—one on the southern and one on the northern districts, and the third a comprehensive report on the whole result of his enquiries (G.Os. No. 306, dated 4th February 1869 and No. 1185, dated 30th April 1869). The general conclusions at which Dr. Day arrived were—

(1) that the demand for fish was generally in excess of the supply;

(2) that the supply had decreased of late years, partly owing to the construction of anicuts which prevented anadromous fish reaching their spawning grounds, and partly owing to the smallness of the mesh of the nets used and consequent destruction of fry.

The remedies he recommended were—

(1) that all fisheries should be let out;

(2) that in the contracts or leases provision should be made for regulating the size of mesh, the periods and localities for fishing, the draining off of water in tanks and the poisoning of rivers;

(3) that "fish passes" should be constructed at anicuts;

(4) that rewards should be given for the destruction of vermin known to be injurious to fish;

(5) that fishing should be prohibited in certain months in the irrigation channels through which the young fish pass down towards the sea; and

(6) that a complete inquiry into the whole of the fisheries of the Madras Presidency both sea and inland should be undertaken.

The Government approved of these proposals and directed the Board to take immediate steps for giving effect to them from the 1st July 1869; the plan of fish-ladder submitted by Dr. Day was to be considered in the Public Works Department and, if approved, introduced at each anicut; and the Board were directed to make further inquiries on the lines suggested by Dr. Day (G.O. No. 1185, dated 30th April 1869). On receipt of these orders the Board represented that it seemed necessary to place salt-water fisheries on a footing distinct from those of waters above tidal reach, as [the sea and] estuaries are fished by a class who have no other support and they would suffer if these fisheries were leased by outsiders; they also pointed out that the minimum mesh recommended by Dr. Day (4 inches circumference) was too large as whiting and all the smaller mullet, to say nothing of prawns, would pass through it. Finally the Board asked that time might be allowed them to consult District officers. The Government saw no reason, however, to defer the introduction of the protective measures suggested by Dr. Day, but they did not object to the details being modified as proposed by the Board. The latter were directed to communicate with Collectors and submit definite proposals for dealing with salt-water fisheries. (G.O. No. 1812, dated 25th June 1869). No definite action was at first taken by the Board but after another Government Order (No. 2899, dated 19th November 1869), they submitted a draft of instructions which they proposed to issue to Collectors in order that effect might be given to Dr. Day's suggestions. This was in December 1869, but no orders were passed by Government until October 1872. Meanwhile much information was collected and a special report on pisciculture in Canara was received from Mr. Thomas who was then Collector of that district. The Board reviewed this at length and their resolution, together with a number of other papers on the subject, was disposed of in G.O. No. 1478, dated 25th October 1872, which is based on a minute by the Hon'ble Mr. Sim. The Government considered that there could not be a doubt that there was and had been for years a very wasteful destruction of fish in inland waters, that irrigation weirs prevented at least one valuable species from ascending to the spawning land, and that although it was impossible to ascertain with certainty how far the stock of fish had been affected yet in the very nature of things the absence of protection must, if suffered to continue, lead sooner or later to the ruin of the fisheries. It was stated, however, that the measures to be taken to preserve the fisheries from the

In the original of G.O. 1657, 25th October 1872.

ruin which was "practically impending over them" must be tentative and limited at first, and only be extended as practical experience was gained. Operations were, therefore, in the first instance to be restricted to particular localities, and it was decided that all rivers, tanks and channels which dry up every year should be left out of consideration. Only the more valuable kinds of fish were to be dealt with at the beginning and the sable fish was mentioned as that which claimed first attention. The size of the mesh of nets was to be limited only in the case of waters rented out to the highest bidder, and which had thus become the subject of a purely commercial transaction. Nothing very definite was said on the subject of fence-mouths but it was stated that some such protection must be afforded to sea-fish on their way to their spawning grounds and to the fry on their way down to the sea. It was pointed out that when, as in the case of the Gōdāvari, the sable fish get above the anaikat by means of the irrigation canals the object in view could be effected by forbidding fishing on certain days while the fish was on its way up, and altogether while the fry was coming down. With regard to purely fresh water fish a selection of the more valuable kind, such as the mahseer, was to be made and protective measures enforced during the spawning season.

All poisoning of waters was to be prohibited and punished under the Penal Code.

Fishing within 100 yards of an anaikat was to be forbidden.

It was added that, having regard to the facts that the privilege of fishing had hitherto almost universally been unrestricted, and that large numbers of the poorer classes had no other occupation or mode of subsistence, the Government were not prepared to sanction any general extension of the system of fishery leases or the imposition of additional taxation on the pursuit in any form.

It was considered that legislative action was necessary and the Board were requested to submit a draft Act enabling Government

(1) to prohibit the capture of certain fish at certain times or in at certain places, either absolutely or with reference to size;

(2) to forbid the use of nets of certain descriptions;

(3) to forbid the use of fixed engines;

(4) to employ the staff necessary for carrying out protective measures.

General action was to be deferred until this Bill was passed, but Mr. Thomas was allowed to continue his experiments in Canara. Nothing was done by the Board for nearly a year and they then (Proceedings No. 1344, dated 24th July 1873)

In G.O. 792, Revenue, 24th May 1875.

said that they had been given to understand that it was the wish of Government that all draft Bills should be prepared in the Legislative Department and they therefore confined themselves to indicating what should, in their opinion, be the main principles and scope of the proposed Fishery Act. They considered that it must be drawn in very general terms and must give considerable power to the executive; that it should be left with Government to extend all or any of the provisions of the Act to any waters or system of waters, fresh or salt, except tanks, streams, or other waters which are not perennial and waters outside the coast-line; and that the administration of the Act should be to the local fund boards, supervised by one or more inspectors of fisheries. The matters on which Government were to be empowered to frame rules were:—

(1) close time or seasons;

(2) the size of the mesh of nets:

(3) the implements for fishing which may or may not be used;

(4) the preservation of breeding fish and young fry;

(5) the pollution of waters in a manner detrimental to fish-life;

(6) fish ladders and other means of promoting the breeding and safety of fish.

The cost of administration would be met from the income raised by taxes on nets, licenses to fishermen, etc.

The consideration of these papers seems to have been deferred until 1875 when His Excellency Lord Hobart minuted against the proposed law which he considered would produce more evil in the manner of vexatious interference with popular rights and the scope given for arbitrary official proceedings, than of good in the protection of a branch of food supply. The Government decided,* however, to entrust the preparation of a draft fishery Bill on the lines indicated to the Board who were instructed to consult Mr. Thomas or other competent judges. It was ordered that provision should be made for the admission of municipalities to a share in the administration of fisheries within their limits, but nothing was said about the objection to a tax on nets which had been urged by the Secretary of State (the Duke of Argyll) in a despatch recorded in G.O. No. 768, Revenue, dated 22nd July 1873.

* G.O. 792, 24th May 1875.

Nothing had been done by the Board up to 1879, when in connection with certain papers regarding the powerlessness of Government to prevent any person fishing in a Government public tank, it was suggested that arrangement should be made to allow of the Third Member of the Board (Mr. Thomas) giving his undivided attention for about a month to the preparation of the draft Bill. The Government declined to sanction such arrangements but asked Mr. Thomas to indicate through the Board the points on which he considered legislation advisable (G.O. No. 1730, dated 20th August 1879). This Mr. Thomas did in a very lengthy paper, and he very naturally pointed out that the Government had had all the requisite information before them for a long time. Mr. Thomas's letter was left undisposed of for two years but then Government requested him to put his Bill into shape and resubmit it to Government (G.O. No. 1646, dated 7th November 1881). Again there was an interval of two years, and then Mr. Thomas submitted a draft Bill, draft rules, and a very elaborate essay which he styled a Fuller explanation of objects and reasons. These were circulated among district officers and to the Board with the result that the Bill, in the particular form it took, was condemned by all the officers consulted with one exception, Mr. Glenny, who admitted that he had not studied the subject. The Board's opinion will be found recorded in G.O. No. 1/3, dated 29th January 1884, and Mr. Thomas's remarks on it in G.O. No. 468, dated 5th April 1884. Mr. Thomas agreed that the intervention of local fund boards and municipalities was undesirable and he accepted some of the other modifications suggested by the Board. The order of Government on this was as follows: "Mr. Thomas "will be requested to recast the Bill in the manner proposed. The Govern- "ment reserve consideration of the other points raised until the matter comes before "them in a more complete shape." Presumably the first sentence refers only to the elimination of local fund boards and municipalities but it is not clear. The opinions of certain selected Collectors referred to above were submitted to Government with Board's Proceedings, dated 30th April 1884, but no orders were passed on them by Government until 28th February 1888 (G.O. No. 175). Mr. Thomas was then placed on special duty for the purpose of drawing up a shorter and less elaborate Bill. It was stated that G.O. No. 468, dated 5th April 1884, would to a considerable extent guide him in the preparation of the measure and he was directed to also avail himself of the "coming conference at Delhi." It was added that the preparation of the Bill itself should require but a comparatively short time and that the greater portion of the period of special duty (three months) should be devoted to

G.O. No. 216, Legislative, 27th November 1883.

(G.O. No. 4987, Revenue, 11th December 1884.)

drawing up a list of rivers to which those provisions of the proposed measure which relate to nets and the erection of fixed engines should be applied.

This is not very definite but it will be seen from the letter to the Government of India, No. 202, Revenue, dated 9th March 1888, that the Government intended to limit the Bill to provisions for prohibiting the use of dynamite, poison and fixed engines and regulating the meshes of nets, and that they did not contemplate the entertainment of any expensive special establishments for the purpose of administering the proposed measure. A copy of this letter was sent to Mr. Thomas.

The Bill prepared by Mr. Thomas in obedience to these instructions is now submitted for orders. It is very badly drafted but that is a minor defect which can easily be remedied. There are other defects which present much more difficulty.

The Bill applies to the whole of the Madras Presidency and to every piece of water in it for a "Fishery" is described as any collection of water, running or still, tidal or non-tidal in which fish may be found, including the sea. The following are the principal provisions of the Bill:—

1. Anglers with rod and line excepted, no person may fish in a fishery unless he has acquired the right to do so under this Act.

2. This right may be disposed of by the Collector, subject to rules by the Governor in Council, in any of the following ways:—

(*a*) It may be given without payment to the public generally or to any section of it; or

(*b*) the exclusive right may be leased; or

(*c*) licenses may be granted at rates and on conditions to be prescribed by the Governor in Council to any number of persons to use nets, traps or other implements; or

(*d*) the right to issue such licenses may be granted (i.e, farmed) to any person.

3. No weir or fixed engine may be erected in any fishery without the special permission of the Collector, and the Governor in Council may make rules for regulating the terms and conditions on which such permission may be granted.

4. No person may bale out any fishery for the purpose of catching fish.

5. No person may put in, or cause or knowingly permit to flow into any fishery any matter that will stupefy, sicken or kill fish, and any person who has poisonous substances in his possession under such circumstances as satisfy a Court that he intended to use them for stupefying, sickening or killing fish may also be punished.

6. There are similar provisions against the use of possession of dynamite.

7. No person may fish, otherwise than with a rod and line, or "strokehaul" or "snatch" within 100 yards of any weir.

8. The Governor in Council may make rules regulating the mesh of nets to be used in any fishery and no person may fish with a net having less dimensions.

9. The Collector may order the erection, repair alteration or maintenance of a fish-ladder, or pass for fish or for navigation.

10. The Governor in Council may make rules for fixing close times.

The above provisions apply in full only to non-private fisheries. Private fisheries are divided into two classes—

(1) exclusive private fisheries,

(2) ordinary private fisheries, the former being those which are not connected with any other fishery and the latter those which are so connected. The definition of private fisheries is not satisfactory but this will be examined later on. The owners of exclusive private fisheries have much the same rights against the public as the Government have but they can do what they like with regard to their own fisheries. Owners of the other class of private fisheries have similar rights but they are subject to the provisions specified above, with the exception of course of the first two.

It will be seen that Mr. Thomas has exceeded the instructions of Government in some particulars, e.g., Nos. 4, 7, 9 and 10 of the above abstract. To 4, however, there seems no objection; 9 and 10 are permissive and may be allowed to stand and as regards 7 it will be remembered that the Hon'ble Mr. Sim was opposed to netting within 100 yards of a weir. In section 20 Mr. Thomas has also exceeded his instructions in prohibiting the erection or maintenance without permission of any *weir* tending to hinder the movements of fish or to interfere with the flow of water. This section would make every little irrigation bund in the country an illegal construction and the Collectors would be overwhelmed with the work of giving permission for their erection or maintenance. This indicates another flaw in the Bill. It comes into force all over the Presidency at the same time; but if Government decide to legislate at all they would surely wish to restrict operations in the first instance to a very limited area. It is suggested therefore that power should be taken to extend all or any of the provisions to any area and that section 15 and the following sections should apply only to such areas to which they have been thus specially extended. This would be a much simpler way than that contemplated by Mr. Thomas, who is apparently prepared to make the Act generally applicable.

Nos. 4, 7 and 10 were included in Dr Day's recommendations which received the approval of Government—vide the summary in paragraph 2, Board's Proceedings printed in G.O. (illegible) dated 25th June 1869. The provision of fish passes though not enunciated in this summary was the question which originally led to the investigation and this means of preservation has been regarded as essential throughout.

C.A.G.—7-12-89.

There are some special provisions relating to the Tuticorin Pearl Fisheries that have yet to be noticed. These are contained in clauses (*i*), (*k*) and (*l*) of section 21 and also in the last paragraph of that section. They are taken from the Ceylon Regulations. The Ceylon law is—

(1) that any vessel which is found between the 10th January and the end of April within the limits of the pearl banks "anchoring or hovering or not proceeding to her proper destination as wind and weather may permit" shall be liable to seizure and on sentence of any competent Revenue Court to forfeiture (Reg. No. 3 of 1811).

(2) the possession *on land* of any net not being such as are used by men walking in the sea, or of any dredge or similar instrument, at any place within 12 miles of Tallayville or Talamanar, or at any place within 12 miles of any part of the shore at low water-mark between Tallayville and Talamanar is declared to be unlawful and every person who has had at any time any such net, etc., in his possession or moved or concealed or abetted the movement or concealment of any such net, etc., is liable to a fine not exceeding £10 or to imprisonment for a term not exceeding six months.

(3) Peace officers and officers of Customs may make search for such nets, etc.

It is not quite clear whether the *possession on land* refers to the whole of (2) or whether possession on sea within 12 miles of low water-mark is also unlawful. Mr. Thomas has assumed that it is.

It is submitted that some enactment is necessary to protect our pearl fisheries which are now open to the incursions of any person who likes to go and rake about among them, and the only thing Government could do would be to apply for an injunction of a Civil Court, which it is not certain they would get. Something more simple than Mr. Thomas' proposals could, however, be devised without difficulty; perhaps indeed clause (*j*) alone might be retained.

As regards the form of the Bill there are, as already stated, a number of defects which require remedying.

In the *Preamble* it is stated that "the exclusive right of the fishing in the Madras Presidency in all fisheries not hereinafter excepted belongs by the custom

of the country to Government", and the term "fishery" is defined as including the sea. It can hardly be contended that the Government possesses the exclusive right of fishing in the sea, and it may be doubted whether "the custom of the country" gives the Government the exclusive right of fishing in inland waters throughout the Presidency though it may have done so in parts. It is obvious that the levy of the moturpha tax on fishermen is no more evidence of the State's exclusive right to fisheries than is the collection of the same tax from weavers evidence of an exclusive right to the weaving industry.

This part of the preamble follows the Burma Act, but the circumstances of Burma in this respect may be different from those of Madras.

Section 4 is a curious specimen of drafting.

Section 6.—"Fishery" includes the sea. How much of the Bay of Bengal or of the Indian Ocean is in "the territories for the time being under the administration of the Governor of Fort St. George"? Twelve miles from low water mark?

Section 10.—This definition is taken from the English statute but it will be necessary in this country to substitute some more intelligible expression for "foul hooking", or it must be defined.

Section 11.—In clause (1), the words "not belonging to the same person" should be added and a similar modification should be made in clause II. For the purposes for which this classification is introduced, all that is required is that the exclusive private fisheries should be cut off from the fisheries of Government or of other persons. Where there are two or more connected pieces of water belonging to the same person the object aimed at by the proposed alteration might be attained by declaring the whole one fishery under the rules to be made under clause (*a*) of section 23, but it is thought that this would be a clumsy way of dealing with, for instance, a chain of zamindari tanks connected only by the surplus channels which are of course generally dry.

Section 14.—This is badly drafted. Clause (*c*) is really a proviso to clause (*b*), and clause (*d*) is obscure, and insufficient, for it would not include any zamindari tanks, nor even rivers flowing through zamindaris when no rents had been collected for the right of fishing in such rivers.

Section 15.—Under section 18, clause (*f*) the Collector may prohibit the angling and this should be referred to in the proviso to this section.

Section 16.—The Honourable Member has already noticed the second clause of this section so it is unnecessary to expatiate upon the obvious injustice of imposing a tax upon exclusive private fisheries upon which absolutely no expenditure direct or indirect will be made by the State. The injustice is nearly but not quite as great in the case of ordinary private fisheries (section 17) these may possibly derive some infinitesimal benefit from the expenditure on the Government fisheries with which they are connected.

Section 18.—Clauses (*h*) and (*i*) should it is thought be struck out. The acquisition referred to will probably never be necessary, or at any rate, advisable, and in any case the provisions of the Land Acquisition Act are not suitable for acquiring rights.

Clause (*e*) requires the addition of some such words as "and he may in like manner cancel such declaration." A similar addition is required to clause (*a*).

Section 20.—This has already been referred to. It is far too wide as it stands.

Section 21.—Much of this of course depends upon other sections but some of the clauses create offences which are not mentioned anywhere. It is submitted that that portion of clause (*e*) relating to possession should be omitted and a similar modification made in clause (*f*). It is also thought that "*injure*" should be substituted for "*stupefy, sicken*" in clause (*e*). The penalties prescribed are the same as in the Burma Act. If the proposals already made regarding Pearl Fisheries are approved, the last paragraph of this section will not be required. It would in any case it is thought need amendment.

Section 22.—Submitted that the two provisoes are unnecessary. There will be very few cases in this Presidency of poisoning rivers by the refuse of mills or other works and if the owner takes all reasonable means to render the liquid harmless nothing more is required.

Section 23 is permissive and unobjectionable. In clause (*g*) "excepted private fisheries" is a mistake for "exclusive private fisheries", for in ordinary private fisheries the mesh of the net must not be less than the prescribed limit—vide section 17 and section 21, clause (*h*). That clause and clause (*g*) of this section are made applicable to ordinary private fisheries by section 17. *

* I see that Mr. Thomas has pointed out the error in his demi-official to me dated 24th July 1888.

Power to cancel or modify rules made should be expressly provided.

Section 26.—It is submitted that this section which ousts the jurisdiction of the ordinary civil courts is most illadvised and unnecessary. If any person feels himself aggrieved by anything done under this Act he should be at liberty to seek redress in the ordinary way. There are no special circumstances at all which warrant a departure from the usual procedure and the officers of Government should have no cause to fear the interference of the civil courts, which, moreover, besides giving confidence to the public, act as a useful check upon departmental vagaries.

Section 28 is indefinite but it would probably give jurisdiction to a Village Magistrate which cannot have been intended. It is observed, however, that the District Board's Act contains a provision (section 166) identical with this.

It is presumed that the general question whether legislation is or is not advisable has been definitely decided by Government in the affirmative and that a measure to prohibit poisoning and dynamiting rivers, and the use of fixed engines (in particular rivers) and to regulate the size of the mesh of nets will be proceeded with. If this assumption is correct it is submitted that an entirely new Bill should be prepared, dealing with these matters and perhaps with a close time and fishing within 100 yards of a weir (vide Hon'ble Mr. Sim's minute). Such a Bill should be permissive in character and should, it is thought, be brought into force very gradually and very cautiously.

It may be that the present uncontrolled fishing is doing much harm, or it may be that the result of preserving and regulating would be to increase the food supply not of the people but of the otter and the cormorant. Until, therefore, some more definite knowledge is obtained it would be most unsafe to take up every streamlet and pond in the Presidency and to forbid fishing in it without a license. Moreover the extensive operations contemplated by Mr. Thomas would almost certainly require special establishments and funds could not be found for these, and all additions to the number of special departments with the inevitable exactions and petty tyranny that follow in their wake are much to be deprecated.

Provision might also be made in the Bill to secure the Pearl Oyster Banks from disturbance.

This subject of fishery legislation sprang from an inquiry about the necessity for fish ladders but so far as can be ascertained no fish-ladder has yet been constructed at any of the Madras anicuts (Please see the accompanying letter from Col. Mead to Mr. Thomas. The latter has not answered it). It is submitted that the Public Works Department should be asked to make further inquiries, for the erection of such passes would possibly do something towards preventing the destruction of anadromous fish while in roe.

P.S.—The Burma Fishery Act and Rules, the Ceylon Ordinances and the English Statute will be found in G.O. No. 216, Legislative, dated 27th November 1883.

H. A. STUART—26-11-88.

Mr. Stuart has very fully summarised all the correspondence which has taken place on this subject and has pointed out numerous defects in the Bill. It seems unnecessary to examine its provisions in detail until it has been decided whether Mr. Thomas' draft should be taken as the basis of legislation or whether some simple and less comprehensive measure should be devised. For the last twenty years the subject of legislation to protect fish has been under discussion and successsive Governments have decided that something must be done. But apparently they have been unable to decide what measures of protection should be included within the scope of the enactment. The Bill which Mr. Thomas has now submitted embraces all the methods of protection which have been suggested by those conversant with the subject but does not go beyond the recommendations which Dr. Day made just twenty years ago and which the Government of the day accepted (vide the summary in Board's Proceedings, dated 25th May 1869, printed in G.O. No. 1512, dated 25th June 1869) and ordered to be carried out at once. The Burma Act is less comprehensive, it does not include the regulation of the size of the mesh or of the seasons for fishing, the prohibition of draining tanks or of fishing within 100 yards of an anicut and the compulsory provision of fish passes. The conditions of Burma are, however, so different that no argument as to the necessity for the provisions referred to in Madras can be based on this circumstance; it seems ~~so clear~~ that they were omitted simply because, owing to the characteristics of the country, they were not deemed requisite. It seems equally obvious that if protection is to be effectual in this province power will have to be taken in respect of each of the above measures which do not find a place in the Burma Fisheries Act. If legislation is to be undertaken at all it will be well to provide for all measures of protection which can reasonably be applied, but the Act should be so drawn that only such of its provision as from time to time may be deemed requisite can be applied to any particular locality. A recent letter bringing to notice the manner in which the Bhavani river is being denuded of fish (·6628) appears to show that it is time that something should be done to check wanton destruction, and the decision of the courts that Government possess no exclusive right of fishing in public waters affords another strong ground for legislation. It is possible by means of ordinary revenue establishments to do something for the preservation of fish (to check for instance such wholesale destruction as is reported to be going on in the Bhavani) and if there are no special establishments to harass the people and no attempt is made to raise a revenue from fisheries except by the ordinary method of cutting out the exclusive right of fishing there is no reason to fear that any hardship will be inflicted on the poorer classes which is the main ground of objection taken to the schemes hitherto put forward. Mr Thomas' idea of imposing a quit-rent on private fisheries as being "cultivable areas" is of course preposterous and his scheme would involve the maintenance of a large establishment and the expenditure of a considerable sum of money, which is out of the question. The draft Bill now sent up will have to be modified considerably but so far as inland waters are concerned it does not appear to go too far. It, however, includes the sea and I question whether the local Legislative Council has any power to make laws and regulations affecting the sea. Its powers are stated to be "to make laws and regulations for the peace and good government of the Presidency" and the sea is not part of the Presidency. Mr. Thomas quotes the Territorial Water Jurisdiction Act and seems to think that under it the courts would have jurisdiction in respect of infringements of any enactment but he is quite mistaken in this. Attention is requested to Board's Proceedings No. 215, dated 10th April 1888 (in the volume circulated herewith) which embodies an opinion of the Government Pleader on the question of the operation of this statute as regards the abkari laws of this Presidency. It seems quite certain that even if the statute did operate to extend the jurisdiction of the courts to breaches of any enactment

G.O. 1453, 6th September 1878.
G.O. 1730, 20th August 1879.

committed within a marine league of the coast they would have no jurisdiction as regards acts committed further out at sea except in respect of those grave offences for which the statute was intended specially to provide. It seems questionable whether the powers of even the Governor-General's Council extend to legislation in respect of the sea, at any rate beyond the three ~~inch~~ limit, which may perhaps be taken as a portion of the Indian ~~term~~ under the dominion of Her Majesty". The Ceylon Regulation 18 of 1843 does not apply to the sea at all—licenses for possession *on land* of instruments for pearl fishing within certain specified limits. Regulation 3 of 1811 applies to the sea but it seems doubtful whether it is valid. I presume it could not be held applicable to foreigners. It would no doubt be desirable be take the opportunity afforded by the proposed legislation to insert provisions which would protect the pearl fisheries but it seems to me that the Legislative Council would have no power to deal with the matter. The ~~both~~ of interference with the banks however does not appear to be serious and that portion of the ~~rule~~ may be omitted without such danger.

Another question which presents considerable difficulty is the right of private proprietors ~~that~~ is a very complicated question; there is no statute law in this Province relating to the rights of riparian owners in rivers adjoining their properties nor is there a single reported decision of the Madras High Court bearing on the question, as far as I know. It is therefore, quite uncertain what the courts will hold on this question and it is desirable to avoid any definition of private fisheries. Mr. Thomas' idea that the exclusive right of fishery belongs by the custom of the country to Government and that unless an express grant of the right can be shown or its exercise for a long period is evidenced by the receipt of rents therefor private proprietors have no valid claims to the fish contained in the waters comprised within the limits of their property is, I believe, altogether erroneous. ~~His~~ section 14 is, however, very vague and it is impossible to conjecture what he means by the concluding sentence of clause (*d*). Apparently his intention is to make provision to enable Government to redeem rights of fishery which have lapsed through the exercise of rights by private owners but the meaning is quite unintelligible.

There does not appear to be any necessity for any definition in the Act. This was the view taken by the Board in paragraphs 4 and 5 of their Proceedings embodied in Government Order dated 24th May 1875. At the time they wrote, however, the decision of the court's ruling that no exclusive rights in fisheries exists had not been passed: the ~~portion~~ is therefore altered and it will not be possible to avoid ~~the~~ reference in the Act to the proprietary right of Government; but there seems to be no necessity to ~~deprive~~ that right. It will suffice to give Government power to prevent fishing without their license in all waters which are not shown to be private property and claims to the right of fishing can be dealt with as they arise. If the Government on enquiry does not see fit to recognise then the waters can be treated as State property leaving those who have any grievances to obtain redress in the courts.

C. A. GALTON—7-12-88.

The draft Fishery Bill is circulated herewith. It was first sent to the Hon'ble Mr. Master who was unable to deal with it before he left. It was sent to the Hon'ble Mr. Stokes who has recorded no remark. I understood from him and before he left tha ~~thought~~ the papers had better be lodged. Orders are solicited.

C.A.G.—30-6-89.

In 1868 Government deputed Dr. Day to report about fisheries. When it received his reports it directed the Board to give effect to his recommendations from the 1st July 1869. The Board represented that there were some doubtful points and Government allowed it to make further inquiries before taking action. Subsequently the Board reported the result of these inquiries, and in 1872 Government ordered legislation to be undertaken. Some further discussion took place and ultimately in 1875 Government directed the *Board* to prepare a Bill. Then there was a long delay during which Mr. Thomas became a Member of the Board. Mr. Thomas submitted a huge Bill, providing for working the fisheries through Local Boards and Municipalities, in 1883. In 1884 Government told Mr. Thomas to recast the Bill leaving out Local Boards and Municipalities. On the 11th July 1888 Mr. Thomas submitted the Bill which is before Government now.

G.O. 2151, Revenue, 12th August 1868.

G.O. 1478, Revenue, 25th October 1872.

G.O. 792, Revenue, 24th May 1875.

G.O. 216, Revenue, 27th November 1883.

G.O. 468, Revenue, 5th April 1884.

In the meantime the Government of India had considered the desirability of legislating about fisheries and asked the Government of Madras to get information. The Government of Madras replied on the 9th March 1888 to the effect that evidence already recorded showed that legislation about fisheries was desirable, that Mr. Thomas had been placed on special duty to attend a conference at Delhi (where this subject amongst ~~the~~ others) was to be discussed, and draft a Bill, and that if the Government of India desired to legislate for the whole country this Government would stay further action. The members of the conference at Delhi decided that a short Act should be passed for all India and that Mr. Thomas should be asked to draft one. Mr. Thomas accordingly submitted an India Bill which is almost identical with the Madras Bill, submitted on the same date, which is now before us. I *presume* that this India Bill has been sent on to the Government of India (though I can find no papers to that effect in the bundle). We seem to have heard nothing from the Government of India either in reply to our letter of the 9th March 1888 or as to what has been determined with reference to the decision of the Delhi conference and Mr. Thomas' India Bill.

G.O. 201-2, Revenue, 9th March 1888.

Yes. G.Os. 5232-3, Revenue, 3rd September 1888.

Please see G.O. 3803, Revenue, 29th June 1888, and letter from India there under.

R.C.C.C.

This being the state of things, I think we should ask the Government of India what it proposes to do as regards the India Fishery Bill, etc., before we take further action. We should ask it, too, as to what powers the local legislature has to deal with fisheries in the *sea*.

Mr. Thomas' Bill was submitted (not volunteered but requisitioned by Government) in July 1888, 2½ years ago, but we can account for the delay by stating that we have awaited action by the Government of India. Under the circumstances I think Mr. Thomas' Bill should be disposed of somehow.

As for the Bill itself (apart from the essay which purports to be a Statement of Objects and Reasons) I think that as shown in Mr. Stuart's note it is badly drafted, it ought to be made more tentative and permissive, providing that rules consistent with the Act or any of the provisions of the Act may be extended to particular places, and it goes further than necessity justifies us in going now, necessitating the establishment of a Conservator of Fisheries and Assistant Conservators as set forth in paragraphs 13-15 of the Statement of Objects and Reasons. It is clearly made out in the papers that fisheries require protection and Government has admitted this

again and again. Power seems to me to be absolutely necessary to prohibit poisoning and dynamiting tanks and rivers, to limit the use of fixed engines to regulate the size of the mesh of nets, to prevent fishing within 100 yards of the great anicuts and to secure to Government the fisheries in Government tanks and rivers. Further than this there is no need to go at present. The full measures of protection and culture which experience in other countries has shown to have the effect of vastly increasing the supply of food have only been recently introduced in those countries and are for in advance of the circumstances of India, where they could not be introduced without an establishment which would be almost useless for many years to come, which would harass the people unmercifully and which could not be paid without raising new taxation. After centuries of education, etc., have enabled the people to neutralize such efforts to oppress them and after the population has increased so that the provision of more food is *necessary*, a special fishery establishment will not do much harm, but that is a question for the future.

The information now before Government is sufficient to enable it to prepare a new bill in the Legislative Department and I think this should be done—if there is to be no India Act on the subject. I don't think any provision need be made in the Bill as regards pearl oyster banks and chank fisheries. This is a special subject. No immediate action is necessary. In papers recently circulated it was decided to ascertain what is done in Ceylon and Australia before resorting to the legislature. Private fishery rights should be recognized wherever there is a private right to the water. In consequence of the "migratory habits of Indian fish" this will prevent the exercise of full protection over public waters in cases where private waters are connected with them, but this is a matter of very little consequence.

J. GROSE—23-1-91.

Our most crying want is for fish ladders at the great anicuts. Orders were issued about it twenty years ago, and it does us no credit that those orders have not been carried out yet. This matter can be attended to at once without waiting for legislation and it should be considered in the Department of Public Works. The report "on the fish ladders and canals visited which was submitted to the Government of India by Mr. Thomas" throws some light on the subject.

J.P.—

PUBLIC WORKS DEPARTMENT.
(IRRIGATION BRANCH).

I cannot counter-initial the draft order about Fishery Bill because paragraph 2 is not correct. The records of this office *do* show that the fish lock at the lower Coleroon anicut was constructed and that the result was unsatisfactory. I send my file on the subject and would direct attention specially to No. 139 T.J., dated 17th April 1889 and No. 2423 T.J., dated 5th February 1890, from Superintending Engineer, VI Circle.

2. I would also invite attention to my note for orders on "Fish Ladders," dated 13th March 1890, with the Honourable Member's rescript thereon 16th March 1890, on which the matter was allowed to drop in this department.

3. I would represent that it is quite useless ordering this department to deal with the subject, except of course, to the extent of building any work which, on the recommendation of a specialist, Government may decide to try; Public Works Department men know no more about fishes and their requirements than do men of any other department and specialists like Dr. Day and Mr. H. S. Thomas have not arrived at any satisfactory conclusion. See letter, dated 7th January 1889, from Mr. Thomas.

J.P.—13-3-91.

REVENUE DEPARTMENT.

C. No. 4893

From H. S. Thomas, Esq^re

Dated 11 July 1888.
Rec^d 20 " "

FOR ORDERS.

With the current Mr. Thomas forwards the draft Fisheries Bill for the Madras Presy. which he was directed to draw up in P.O. 28 Feby. 1888, No. 175. It is submitted at once as it is thought that the Hon. Member may like to discuss the matter with Sir Edward Buck. It is not known whether the Govt. of India propose to legislate for the whole country: if they do it is obviously unnecessary to proceed with a local Bill.

There is no spare copy of the draft so a detailed note on it cannot be drawn up until that ~~is~~ copy sent herewith is returned. It would it is thought be well to inform Collectors ~~matters~~ of the opinion of Govt

on the Bill before for-
warding it to them for an
expression of their views.

Hrs
24 July

24/7

Speech

Mr. Romaine's Petition

FOR ORDERS.

29

c 2 41

Draft Fisheries Bill

For orders.

The first paper in the file on the subject is dated 11th Sept 1867 and is an order of Govt. directing the Collectors of Godavari, Kistna and Tanjore to report on the stoppage of fish the tubs or sable fish at the large anicuts, and its capture there. Very shortly after this a despatch was received from the Secy. of State for India enclosing copies of letter on the same subject from Col. Haig and Sir Arthur Cotton and these papers were also communicated to the above Collectors & the Collectors of S. Arcot & Nellore and to Dr. Day. The replies show that in all the great rivers which flow out on the East Coast there are one or more kinds of valuable fish which, entering the rivers from the sea for the purpose of spawning, are stopped by the anicuts and there caught in vast numbers with the roe in them. This

the people was deemed "worthy of the attention of Govt." and they accordingly deputed Dr Day to enquire and make a comprehensive report on it.
(G.O. 27 May 1868, No. 1468.)

On hearing of Dr Day's deputation the Govt. of India asked that he might be allowed to visit the rivers on the Orissa Coast also and that he might be instructed to direct his attention to the practical aspect of the question, i.e. how far ~~injury~~ affected the food supply of the people was being affected by the injury to fish alleged to be caused by anicuts and other irrigational works. Instructions to this effect were issued to Dr Day (G.O. 12 Aug. 1868, No. 2158). He has submitted three reports, one on the Southern and one on the Northern districts, and the third a comprehensive report on the whole result of his inquiries (G.O. 4 Feb. 1869, No. 306 and G.O. 30th April 1869, No. 1185). The general conclusions at which Dr Day arrived were that

(1) the demand for fish was generally in excess of the supply;

(2) that the supply had decreased of late years, partly owing to the construction of anicuts which prevented anadromous fish reaching their spawning grounds, and partly owing to the smallness of the mesh of the nets used and consequent destruction of fry.

The remedies he recommended were

(1) that all fisheries shd. be let out;

(2) that in the contracts or leases provision shd. be made for regulating the size of mesh, the periods and localities for fishing, the draining off of water in tanks and the poisoning of rivers;

(3) that 'fish passes' should be constructed at anicuts;

(4) that rewards for the destruction of vermin known to be injurious to fish;

(5) that fishing shd. be prohibited in certain months in the irrigation channels through which the young fish pass down towards the sea; and

(6) that a complete inquiry into the whole of the fisheries

Of the Madras Presidency both sea and inland should be undertaken.

The Govt. approved of these proposals and directed the Board to take immediate steps for giving effect to them from the 1st July 1869; the plan of free-labor submitted by Dr. Day was to be considered in the P.W. Dept and, if approved, introduced at each ancut; and the Board were directed to make further inquiries on the lines suggested by Dr. Day. (G.O. 30 April 1869, No. 1185) On receipt of these orders the Board represented that it seemed necessary to place salt-water fisheries on a footing distinct from those of waters above tidal reach; and that the [illegible] as [the sea and] estuaries are fished by a class who have no other support and they would suffer if these fisheries were leased by outsiders; they also pointed out that the minimum mesh recommended by Dr. Day (4 inches ca) was too large as whiting and the smaller mullet, & many young prawns, would pass through it. Finally the Board asked that time might be allowed them to consult Dt. Officers. The Govt. saw no reason, however, to defer the introduction of the protective measures suggested by Dr. Day, but they did not object to the details being modified as proposed by the Board. The latter were directed to communicate with Collectors and submit definite proposals for dealing with salt-water fisheries.

(G.O. 25 June 1869 No. 1820)

No classification was at present taken by the Board, but after another Govt order (of 19 Nov. 1869 No. 2674) they submitted draft instructions which they proposed to issue to Collectors in order that effect might be given to Dr Day's suggestions. This was in December 1869 & no orders were passed by Govt until Oct. 1872. Meanwhile much information was collected and a special report on pisciculture in Ca[illegible]

as received from Mr Thos
was then Collector of
that district. The Board h
viewed this at length, and
their Resolution, together with
number of other papers on
the subject, were disposed of
G.O. 25 Oct. 1892, No. 1478.
is based on a minute by
Hon. Mr Smith. The Govt is
advised that there could
be a doubt that there are
had been for years a very
wasteful destruction of fi
in inland waters, that
tion were prevented at lea
valuable species from
being to disappear
and that although it was
possible to ascertain with
from the
from
in the very nature of thing
the absence of protection
suffered to continue
sooner or later to the ru
the fisheries. It was stat
however, that the measure
be taken to preserve the
species from the ruin which

was practically impending
em must be tentative
limited at first, and only be
ed as practical experience
gained. Operations were,
erefore, in the first instance
be restricted to particular
alities, and it was decided
at all rivers, tanks and
hannels which they agreed
ld should be left out of
nsideration. Only the more
aluable kinds of fish were
be dealt with at the
ment, and the Sable fish
mentioned as that which

the mesh of nets was to be
limited only in the case of
waters reached out to the highest
pool, and which had thus
become in the
purely estuarine
Nothing very definite was said
on the subject of fence-nets,
but it was stated that some
such protection must be afforded to sea-fish on their way
to their spawning grounds and
to the fry on their way down
the sea. It was pointed

that in the case of
salt & fish get above the
aucut by means of the
gaiter canals the objects
view could be effected by for
bidding fishing on certain d
while the fish was on its
way up, and altogether while
the fry was coming down.
With regard to purely fresh
water fish a selection of the
more valuable kind, such
as [illegible] was to be
and protective measures
d during the spawning
[illegible]
to be prohibited and punished
under the Penal Code.
Fishing within 100 yards of
an aucut was to be forbidden
It was decided that, having
regard to the facts that the
privilege of fishing had hitherto
been generally unrestricted, and
that large numbers of the
poorer classes had no other
occupation or mode of sub-
sistence, the Govt were not
prepared to sanction any general
alteration of the system of fishery

and they therefore confined
themselves to such clauses as
should in their opinions be the
main principles and scope of
the proposed Fishery Act. They
considered that it must be dra
in very general terms and must
give considerable power to
the executive; that it should
be left with Govt. to extend all
or any of the provisions of the
Act to any waters or system
of waters, fresh or salt, except
tanks [illegible]
(4) to employ the staff necessary
for carrying out the protective
measures
General action was to be defined
but the Bill was opposed but
Mr Thomas was allowed to con-
tinue his representations
Nothing was done by the Board
for nearly a year and they then
(Proc. 24 July 1873 No 1364) said that
they had been given to understand
that it was the wish of Govt.
that all draft bills shd be pre-
pared in the Legislative Dept

leases or the imposition
additional taxation on
result unlikely form.
was considered that legisl
tion was necessary and the
requested to submit a draf
enabling Govt.
(ii) to prohibit the capture of
fish at certain times or
certain places, either
solutely or with referenc
size;
(2) to forbid the use of nets of c
tain descriptions;
(
which are not perennial
waters & with the Govt
and that the administratio
of the Act shd be left to
Local Fund Boards, subjec
one month's inspection of Fi
bailiffs employed by Govt.
(b) empowering to prescribe
with
(1) Close times, exceptions;
(2) the size of the mesh of n
(3) the implements for fish
which may or may not
used;
(4) the preservation of breed

th and y[illegible] fry;
(5) the pollution of waters in
a manner detrimental to
fish-life;
(6.) fish ladders and other means
of promoting the breeding and
safety of fish.

The cost of administration
would be met from the income
raised by taxes on nets, licences
to fishermen etc.

The consideration of these papers
seems to have been deferred until
1875 when H.E. Lord [illegible] sub-

th
of vexatious interference with
ular rights and the scope
given for arbitrary official
proceedings. Want of good w
the protection of a branch
of food supply. The Govt.
decided however to submit the
preparation of a draft fishery
bill on the lines indicated to
the Board who were instructed

officers connected with
ception Mr Glenny who

* GO. 24 May 1875, No 792
fl Q

to consult Mr Thomas or other competent judges. It was also provided that before any of the admission of Municipalities to a share in the administration of fisheries within their limits, but nothing was said about the objection to a tax on nets which had been urged by the Secy of State (the Duke of Argyll) in a despatch recorded in G.O. 22 July 1873 No 176 Col Rec [illegible] papers in regard to the powerlessness of Govt to prevent any person fishing in a Govt public tank, it was suggested that arrangements shd be made to allow of the Third Member of the Board (Mr Thomas) giving his undivided attention for about a month to the preparation of the draft Bill. The Govt declined to sanction such arrangements but asked Mr Thomas to indicate through the Board

fl 7

He also forwarded a draft Bill which he had drawn in 1870

fl 8

G.O. 27 Nov 1883, No 216 Legve
(Gs 4907/11-12-83 Rec'd fl N)

the points on which he considered legislation advisable
(G.O. 20 Aug 1879, No 430).
This Mr Thomas did in a very lengthy paper, and he very naturally pointed out that the Govt had had all the requisite information before them for a long time. Mr Thomas's letter was left undisposed of for two years but then Govt requested him to put his bill into shape and resubmit it to Govt.
(G.O. 7 Nov 1881, No 646.)
Again there was an interval of two years, and Mr Thomas submitted a draft Bill, draft Rules, and a very elaborate essay which he styled a Fuller Explanation of Objects and Reasons. These were circulated among Dt Officers and to the Board with the result that the Bill in the form it took was condemned by all the officers consulted with one exception, Mr Glenny, who

submitted that he had not studied the subject. The Board's opinion will be found recorded in P.D. 29 Jan. 1884, No 143, and Mr. Thomas's remarks on it in G.O. 5 Apl. 1884 No 468.

Mr. Thomas agreed that the intervention of Local Fund Boards and Municipalities was undesirable and he accepted some of the other modifications suggested by the Board. The order of Govt. on this was as follows:

"Mr. Thomas will be requested to recast the Bill in the manner proposed. The Govt. reserve consideration of the other points raised until the matter comes before them in a complete shape. Presumably the first sentence refers only to the elimination of Local Fund Boards & Municipalities but it is not clear. The opinions of certain selected Collectors referred to are submitted to Govt. with Board's Proceedings 28 Apl. 1884; but Govt. desire no orders were passed on them by Govt. until 28 Feb

16

1885 (G.O. No 175). Mr. Thomas was then placed on special duty for the purpose of drawing up a shorter and less elaborate Bill. It was stated that G.O. 5 Apl. 1884, No 460 would to a considerable extent guide him in the preparation of the measure and he was directed to also avail himself of the "coming Conference at Delhi". It was added that the preparation of the Bill itself should require but a comparatively short time and that the greater portion of the period of special duty (3 months) should be devoted to drawing up a list of points to which those provisions of the proposed measure which relate to the nets and the erection of fixed engines should be applied. This is not very definite but it was [illegible] letter to the Govt. of India, dated March 1885 No 202 Rev

that the Govt. intended to limit the Bill to provisions for prohibiting the use of dynamite, poison and fixed engines and regulating the meshes of nets, and that they did not contemplate the entertainment of any expensive special establishments for the purpose of administering the proposed measure. A copy of this letter was sent to Mr. Thomas.

The Bill prepared by Mr. Thomas in obedience to these instructions is now submitted for orders. It is very badly drafted but that is a minor defect which can easily be remedied. There are other defects which present much more difficulty.

~~In the Preamble it is stated that the exclusive right of the Public Fisheries of the Province is vested in the Crown for the time being.~~

5

The Bill applies to the whole of the Madras Presidency and to every piece of water in it for a 'Fishery' is described as any collection of water, running or still, tidal or non-tidal in which fish may be found, including the sea. The following ~~Clauses~~ are the principal provisions of the Bill:

1. Anglers with rod and line excepted, no person may fish in a fishery unless he has acquired the right to do so under this Act.

2. This right may be disposed of by the Collector, subject to Rules by the G. in C., in any of the following ways:
   (a) It may be given without payment to the public generally or to any section of it; or
   (b) the exclusive right may be leased; or
   (c) licences may be granted at rates and on conditions to be prescribed by the G. in C. to any number of

persons to use nets, traps or other implements; or

(d) the right to issue such licences may be granted (i.e. farmed) to any person or weir

3. No fixed engine may be erected in any fishery without the special permission of the Collector, and the G. in C. may make rules for regulating the terms and conditions on which such permission may be granted.

4. No person may bale out any fishery for the purpose of catching fish.

5. No person may put in, or cause or knowingly permit to flow into any fishery any matter that will stupefy sicken or kill fish, and any person who has poisonous substances in his possession under such circumstances as to satisfy the Court that he intended to use them for stupefying sickening or killing fish may also be punished.

There are similar provisions against the use or possession of dynamite.

7. No person may fish otherwise than with a rod and line, or "strike and haul" or a "snatch" within 100 yards of any weir.

8. The Gov. may make rules regulating the mesh of nets to be used in any fishery and no person may fish with a net having less dimensions.

9. The Collector may order the erection, repair alteration or maintenance of a fish-ladder, or pass for fish or for navigation.

10. The G. in C. may make Rules for fixing close times.

The above provisions apply in full only to non-private fisheries. Private Fisheries are divided into two classes — (1) Exclusive Private Fisheries, (2) Ordinary Private Fisheries, the former being those which are not connected with any other fishery and the latter those

Whether are so connected. The definition of Private Fisheries is not satisfactory: but this will be examined later on.

The owners of Exclusive Private Fisheries can have much the same rights against the public as the Govt. have: but they as the Govt. have but they fisheries are excluded can do what they like with regard to their own fisheries. Owners of the other other class of private fisheries do have similar rights but they are subject to the provisions specified above, with the exception of course of the first two.

It will be seen that Mr. Thomas has exceeded the instructions of Govt. in some particulars eg Nos 4, 7, 9 & 10 of the above abstract. To 4 however, there seems no objection; 9 and 10 are permissive and may be allowed to stand and as regards 7 it will be remembered that the Hon. Mr. Sim was opposed to netting within 100 yards of a weir

Nos 4 7 and 10 are included in Dr Days recommendation with regard to the approval of Govt. - Vide the memorandum of June 2 1869 Pro No 600. 25 June 1869.

Such cases may not be circumvented in this country but the practice will originally be the means of preventing the legislation being so radical that

In section 20 Mr Thomas has also exceeded his instructions in prohibiting the erection or maintenance without permission of any weir tending to hinder the movements of fish or to interfere with the flow of water. This section would make every little irrigation bund in the country an illegal construction and the Collectors would be overwhelmed with the work of giving permission for their erection or maintenance. The indicates another flaw in the Bill. It comes into force all over the Presidency at the same time, but if Govt. decide to legislate at all they would surely wish to restrict operations in the first instance to a very limited area. It is suggested therefore that power should be taken to extend all or any of the provisions to any area and that section 15

and these following sections should apply only to such areas to which they have been thus specially extended. This would be a much simpler way than that contemplated by Mr Thomas, who is apparently prepared to make the act generally applicable.

There are some special provisions relating to the Tuticorin Pearl Fisheries that have yet to be noticed. These are contained in clauses (k) and (l) of Sec. 21 and also in the last paragraph of that section. They are evidently taken from the Ceylon Regulations ~~but they differ considerably on~~ the most important point. The Ceylon law is

(1) that any vessel which is found between the 10 Jan. and the end of April within the limits of the Pearl Banks anchoring or hovering or not proceeding to her proper destination as wind and weather may permit

shall be liable to seizure and on conviction of any competent Revenue Court to forfeiture (Reg. 1 No. 3 of 1811).

(2) The possession on land of any net not being such as are used by men wading, in the sea, or of any dredge or similar instrument, at any place within 12 miles of Tallawille or Talamanar, or at any place within 12 miles of any part of the shore at low water mark between Tallawille and Talamanar is declared to be unlawful, and every person who has had at any time during such net etc in his possession or removed or concealed or abetted the movement or concealment of any such net etc. is liable to a fine not exceeding £10. or to imprisonment for a term not exceeding 6 months

(3) Peace Officers and Officers of Customs may make search for such nets etc.

It is not quite clear whether the possession on land refers to the whole of (2) or whether possession on sea

12 miles of low water mark is also unlawful. Mr Thomas has assumed that it is.

It is submitted that some enactment is necessary to protect our Pearl Fisheries which are now open to the endeavours of any person who likes to go and make about among them, and the only thing Govt could do would be to apply for an injunction of a Civil Court, which it is not certain they would get. Something more ample than Mr Thomas's proposals could, however, be devised without difficulty; perhaps under clause (j) alone might be retained.

As regards the form of the Bill there are, as already stated, a number of defects, which require remedying.

In the Preamble it is stated that "the exclusive right of the fishing in the Madras Presidency of all fisheries not hereinafter specified belongs by the custom of the country to the Government", and the term "fishery" is

defined as including "the exclusive right of fishing". It can hardly be contended that the Govt possesses the exclusive right of fishing in the sea, and it may be doubted whether the custom of the country "gives the Govt the exclusive right of fishing in inland waters throughout the Presidency". It may however be obvious that the privilege of [illegible] fishermen is no more "evidence of the State's exclusive right to fisheries than the collection of the same from weavers is evidence of an exclusive right to the weaving industry". The last part of the preamble follows the Burma Act, but the circumstances of Burma in this respect may be different from those of Madras.

Section 6. "Fishery" includes the How much of the Bay

Ocean contain in "the territories for the time being under the administration of the Govt of Fort St George" & Madras miles from low water mark?

Section 10. This definition is taken from the English Statute but will be necessary in this country to substitute some more intelligible expression for "sport hooking", or it must be clearly defined.

Section 11. In clause I. the words "not belonging to the same person" should be added and a similar modification should be made in clause IV. For the purpose for which this classification is introduced, that is required is that the exclusive private fisheries should be cut off from the fisheries of Govt. or of other persons. Where there are two or more pieces of water connected [illegible] belonging to the

objectionable
proposed alteration
contained in the
[illegible] under the Rules
& subordinate rules, clause (a)
of sec. 23, but it is thought
that this would be a clumsy
way of dealing with fisheries
[illegible] channels which are
of course generally
[illegible]
Section 14. This section
[illegible] Clause (c) is readily
open to [illegible] clause (b), and
clause (d) is obscure, and in-
sufficient, for it would not
include any Zemindari tanks,
nor even rivers flowing thro'
Zemindaries when no rents had
been collected for the right
of fishing in such rivers.
Section 15. Under sec 15,
clause (f) the Collector may
prohibit that angling [illegible]
referred to "

this section

The Hon. Member has already noticed the 2nd clause of this section so it is unnecessary to expatiate upon the obvious injustice of imposing a tax upon exclusive private fisheries upon which absolutely no expenditure direct or indirect will be made by the State. The injustice is nearly enough but not quite as great in the case of ordinary private fisheries where there may possibly arise some infinitesimal benefit to them from the expenditure on the Govt. fisheries with which they are connected.

Sec 18. Clauses (h) and (i) shd. it is thought be struck out. The acquisition referred to will probably never be of any practical importance.

Act are not available for claiming rights.

Clause (e) requires the addition of, such words as "who may in like manner cancel such declaration". A similar addition is required to clause (a).

Section 20. This has already been referred to. It is far too wide as it stands.

Sec 21. Much of this depends upon other sections of the clauses creating offences which are not mentioned in this section. The portion of clause (e) in question shd. be omitted in consequence of the further modification made in clause (f). It is also thought that the word "injure" shd. be substituted for "stupefy, sicken" in clause (e). The penalties prescribed are the same as in the Burma Act. If the proposals already made regarding Pearl Fisheries are approved, the last para of this section will

not be required and would
in any case, it is thought, be
amendment.

Section 22 — Submitted that
the two processes are un-
necessary. There will be very
few cases in the Province
of poisoning rivers by the
refuse of mills or other works
and in the other cases all
reasonable means to preside
legal proceedings is
is required.

Section 23 is objectionable. In clause
(f) the words "private fisheries"
are mistaken for "exclusive
fisheries" for in
private fisheries the meshes of
the net must not be less than
the prescribed limit — Vide s. 17
and s. 21 clause (k). That s
and clause (g) of this section are
made applicable to ordinary pri-
vate fisheries by s. 17.
Power to cancel or modify rights
should be expressly pro-
vided.

Section 25 — It is submitted

† I see that Mr. Thomas has
pointed out the error in his
D.O. letter dated 24.7.88.

that this section which
ets the jurisdiction of the
inary Civil Courts is most
ll advised and unnecessary. If
ny person feels himself ag-
grieved by anything done under
this Act he should be at liberty
to seek redress in the ordinary
way. There are no special cir-
cumstances — all which warrant
a departure from the usual
procedure and the officers of
Govt. should have no cause to
in the interference of the Civil
ts which moreover, besides
giving confidence to the public
act as a useful check upon
Departmental vagaries.

Section 28 As it
indefinite
but it would probably give juris-
diction to a Village Magistra
which cannot have been inten
ed. It is observed, however, th
the Dt. Boards Act contains a
provision (s. 166) identical with
this.

It is presumed that the go

...ent advisable has been definitely decided by Govt. in the affirmative and that a measure to prohibit dynamiting and poisoning rivers, and the use of fixed engines (in particular river) and to regulate the size of the mesh of nets will be proceeded with. If this assumption is correct it is submitted that an entirely new Bill should be prepared, dealing with these matters and perhaps with a close time and fishing within 100 yards of a weir (vide Hon. Mr. Sim's Minute). Such a Bill should be permissive in character and should, it is thought, be brought into force very gradually and very cautiously. It may be that the present unrestricted fishing is doing much harm, or it may be that the result of preserving and regulating would be to increase the food supply not of the people but of the otter and the cormorant. Until, therefore, some more definite knowledge is obtained it would be most unsafe to take up every streamlet and pond in the Presidency and to forbid fishing in it without a license.

...templated by Mr. Thomas ...ld almost certainly require ...ial establishments ... ...do could not be found for ...re and Madras all ...to the number of ... Special Department ... the inevitable exactions and ... tyranny that follow in their ...ke are much to be deprecated. Provision might also be ...de in the Bill to secure ...e Pearl ...

Cus 7001

...about the necessity for fish ladders but so far as can be ascertained no fish-ladder has yet been constructed at any of the Madras Aqueducts. (Please see the accompanying letter from Col. Mead to Mr. Thomas. The latter has not answered it). It is submitted that the P.W. Dept should be asked to make further inquiries ... for the erection of such passes would possibly do

something towards preventing the destruction of anadromous fish while in roe.

26 Nov.

P.S. The Burmah Fishery Act and Rules, the Ceylon Ordinances and the English Statute will be found in G 24 Nov. 1888, N° 216. Legislative

Fisheries Bill

270-71-7-4-1891

and of the sections [illegible] for the prohibition of driving stakes in the fishing [illegible] 100 yards of an [illegible] and the compulsory [illegible] in fish passes. The Conditions of the [illegible] case however do [illegible] that his experience as to the necessity for the [illegible] [illegible] be [illegible] in the [illegible] [illegible] that they are [illegible] [illegible] to the characteristics of the country they are not deemed necessary to appear equally [illegible] that, if protection is to be effected in this Province, more will have to be taken [illegible] of the [illegible] measures which do not find a place in the [illegible] Fisheries Act

legislation is to be undertaken at all it would be well to provide for all the [illegible] of protection which can reasonably be applied, but the law should be so drawn that only such of its provisions as from time to time may be deemed requisite can be applied to any particular locality. [illegible] the [illegible] bringing together the evidence on which the [illegible] is being [illegible] Rodney [illegible] of fish [illegible] 6628 [illegible] it appears clear that it is time that something should be done to check wanton destruction, and the

O. 8. 6 Sept/78 1453 decisions of the Courts

O 20 Aug/79 730 that the Crown possesses no exclusive right of fishing [illegible] public interest affords another strong argument for legislation – [illegible]

NOTE FOR THE ~~UNDER SECRETARY.~~

250

The Hon: Mr. Gosse's
Note upon his
Fishery Book.

23. Jan - 51.

59

4893

Drifs Fisheries & Rail.

So 2157
12-5-60

In 1868 Govt disputed the Legality of exports about the licences. When it declined the exports it directed the Board to give effect this recommendation from the 31st July 1869. The Board reported that there were some doubtful points & Govt allowed it to make further inquiries before taking action. Subsequently the Board reported the result of these inquiries, & in 1872 Govt ordered to get below the under Lines. Came further discussion which took place & ultimately in 1875 Govt directed the Board to prepare a Bill. There was a long delay during which Mr Thomas became a member of the Board. Mr Thomas submitted a large Bill, providing for working the Fisheries through Local Boards & Municipalities, in 1883 & in 1884 Govt told Mr Thomas to re-cast the Bill. Leaving out the Local Boards & Municipalities. In the 11th July 1888 Mr Thomas submitted the Bill which is before Govt now. It was drafted since our time (the P.G.'s) he considered the desirability

So 1472
25-7-72

So 712
24-5-75

S-71-5-11-1891

So 216 N
27-1-93

So 4617
5-4-1894

of legislating about Fisheries & asked the Govt of Madras to get information. The Govt of Madras replied on the 9.3.88 to the effect that evidence about as recorded showed that legislation about Fisheries was desirable, that Mr Thomas had been placed on special duty & attended a Conference at Delhi (where this subject among others) was to be discussed) & draft a Bill, & that if the G of I decided to legislate for the whole Country this Govt would pass further action. The members of the Conference at Delhi decided that a short act should be framed & that Mr Thomas should be asked to draft one. Mr Thomas accordingly submitted an Indian Bill which is almost identical with the Madras Bill, submitted on the same date, which is now before us. I presume that the Bill Indian Bill has been sent on to the G of I (who) I can find no papers to that effect in the Bundle) We seem to have heard nothing from the G of I either in reply to our letter of the 9.3.88 or as to what has been determined with reference to the decision of the Delhi Conference and Mr Thomas' Indian Bill

This being the state of things, I think we should ask the G of I what it proposes to do as regards the Indian Fishery Bill & before we take further action. We should ask it too, as to what progress the local legislature has to deal with fisheries in the Madras Bill was submitted (not volunteered but requisitioned by Govt) in July 1888, 2½ years ago, but we can account for the delay by stating that we have awaited action by the G of I. Under the circumstances I think Mr Thomas' Bill should be disposed of somehow.

As for the Bill itself (apart from the copy which purports to be a Statement of Objects & Reasons) I think that as shown in Mr Stewart's note it is badly drafted, it ought to be made more tentative & preliminary, providing that rules cannot limit the act as many of the provisions of the act may be extended to particular places, when they have received sanction in some way, necessitating the establishment of a Conservator of Fisheries &

Assistant Conservators, as set forth in paras 13 - 15 of the Statement entd Objects & Reasons. It is clear, made out in the papers that Fisheries require protection & Govt has admitted this again & again. Power seems to be absolutely necessary to prohibit poisoning & dynamiting, hunters & nets, to limit the use of fixed engines, to regulate the age of the mesh of nets, to prevent fishing within 100 yds of the spawning grounds & to secure to Govt the Fisheries in Govt tanks & rivers. But this is the main thing there is no need to go at present. The full measures of protection & culture which experience in other countries has shown to have the effect of vastly increasing the supply of food have only been recently introduced in those countries & are far in advance of the circumstances of India, where they could not be introduced without an establishment which would be almost useless for many years to come, & which would hazard the funds unnecessarily of which could not be paid without raising new taxation. After centuries of education the Lake enabled the people to voluntarily make efforts to preserve their

2.

& after the population has increased so that the provision of much food is necessary, a special Fishery Estab. will not do much harm — but this is a question for the future.

The information now before Govt is sufficient to enable it to frame a new Bill in the Legislative Dept & I think this should be done — as there is to be no India Act on the subject I do not think any provision need be made in the Bill as regards pearl-oyster banks & chank fisheries. This is a special subject. No immediate action is necessary. The papers recently circulated it was decided to ascertain what is done in Ceylon & Australia before resorting to the Legislature. Private Fishery rights should be recognized wherever there is a private right to the waters. The advantages of the "migratory habits of Indian fish" this will promote the exercise of full protection over public waters in cases where private waters are connected with them, but this is a matter of very little consequence.

J.S.
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GOVT. OF MADRAS. 188/ P. W. DEPT.

CHIEF ENGINEER FOR IRRIGATION.

Madras, 13th March 1891.

OFFICE NOTE.

Circulation Register.

To	From	Despatch Date.	Receipt Date.

GOVERNMENT OF MADRAS
16 MAR 91
REVENUE DEPARTMENT

I cannot countersign draft order about Fisheries because para 2 not correct. Records of this office do show that the fish Lock at the Lower Anicut was constructed from that the result was unsatisfactory. I must file on the subject and direct attention specially to 1397 J dated 17th April 1889 and 2423 J dated 5th July 1889.

it is 20 yrs ago, & there is no end in that time orders have not been carried out yet. This matter can be attended to at once without waiting for Legislation & it should be considered as the top of P.W. The report on two fresh Lakes & canals which was submitted [illegible] 1889 by Mr. Thomas Venus since lapsed on the subject.

from Lisbon [illegible]

2 ... vened also invite attenti
to my note for Orders on Fish &
dated 13th March 1890 with the M
Members prescripts thereon & no
on which the matter was allowed
to drop in this Department

3 I would represent that
quite useless ordering this Depart
to deal with the subject, except
of course to the extent of fixi
any work which on the recomm
of a Specialist Government m
decide to try. D.F.W. mem
no more about fishes an
their requirements than de
of any other department
Specialists like Dr Day
and Mr H.T. Thomas h
not arrived at any satisfa
Conclusion - See letter dy
1889 from Mr Thomas

Jno

APRIL.

ENQUIRING whether any action has been taken regarding the India Fishery Bill and whether, in the opinion of the Government of India, it is within the powers of the Local Government to legislate for fisheries in the sea, and if so, within what limit from the sea.