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## MADRAS RECORD OFFICE.

Government of Madras.

*Revenue* DEPARTMENT.

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| G.O. No. | 1180          | Press<br>Mis. |
| Dated    | 21. 12. 1887. |               |

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GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—again the following G.O., dated 15th August 1887, Mis. No. 4752, Revenue:—

Read—the following Proceedings of the Board of Revenue (Land Revenue), dated 14th July 1887, No. 340:—

Read—the following letter from J. LEE-WARNER, Esq., Collector of Tinnevely, to the Secretary to the Commissioners of Land Revenue, dated 27th May 1887, No. 339:—

I have the honor to forward for orders the report of the Superintendent of Pearl Banks on the examination of pearl banks on the coasts of Tinnevely and Madura, ending May.

2. In paragraph 4 of his report, Mr. Phipps refers to a trip which I took with him to the Tholayiram Par in April. I wished to satisfy myself as to the abundance of oysters by seeing the result of a few dives made in my presence. The divers (there were two men with us) explained to me that the floor of the rock was so closely packed with shells that they had not to leave the spot where they went down, but simply collected the spoils at their feet. The fact that they did not bring up an overwhelming number at each dive was only due to the tenacity with which the healthy oysters at this stage hold on to their bed. I questioned the men very closely, and have no reason to suppose that they were making fun of us. They had no motive for doing so that I can see. They had both of them been over to the Ceylon fishery; and, in comparing prospects, they said that if the two fisheries should go on at the same time they would prefer to stop here.

3. Mr. Phipps gives it as his opinion in paragraph 3 that the south bank of the field should be fished not later than March next; and, for the purpose of getting a sufficient number of divers together, recommends that the widest possible publicity be given of the intention to fish at that time. It will be observed, however, that again towards the end of paragraph 9, Mr. Phipps speaks of the fixture of the fishery for March as a contingency which will be determined in November. I have no means of ascertaining here how long it would take divers to come down from Bahrein in the Persian Gulf or across from the Laccadives; but I imagine that, in these cases, the earlier intimation is given of the fishery, the better it will be. If, as I am told, we can easily communicate with Bahrein in two months, and the advertisements are published in December, there will not be over much time for the divers to find their way down to our fishery in March. I think, therefore, as a preliminary that it would be advisable to ascertain from the authorities in the Persian Gulf whether it is likely that any number of these men would come down for a lucrative fishery in the prospect of earning only a third share of all the oysters fished in their boats, and if so, how many we might count upon having.

4. Paragraphs 9 and 10 deal with the provision of a budget estimate of Rs. 12,000 for the erection of a settlement at the place where the oysters are landed, which does not seem at all excessive, considering the nature of the place, and a plan for engaging the services of the steam tug *Mudras* for the time. Mr. Phipps speaks very strongly of the necessity for our having the *Mudras*. In this I cordially agree.

5. The contingent and establishment charges in 1861 came to Rs. 4,900, which did not include the cost of putting up the temporary building, &c., or the cost of a guard vessel which will be Rs. 1,000 for two months. I would recommend to increase the budget provision to Rs. 15,000.

## ENCLOSURE No. 1.

From G. A. PHIPPS, Esq., Superintendent of Pearl Banks, to the Collector of Tinnevely, dated Tuticorin, 23rd May 1887, No. 20.

I have the honor to inform you that the examination of the pearl banks has now been concluded, the weather having become unsettled has prevented a few banks off Pinnacoi from being inspected, but it is of little consequence as they were looked at last year and found bare. I regret to say that the fall of suran spat mentioned in my letter of 30th November last has been much more general than I then expected; it has extended to nearly all the banks from Vambar to Pinnacoi, excepting the Tholayiram Par where the oysters now approaching maturity seem able to withstand its destructive influence; even on this the oysters on the southern end have some of them a little suran adhering, but so far it has done no harm, as all the other banks both on the Madura and Tinnevely coast are in such an unprofitable state, I do not think that it is necessary to refer to each as they may all be classed under the head of bare of all oysters and of no value. In the annexed statement will be seen the condition of each bank on the date of examination this year and each year since 1884.

2. The month of March having been remarkably fine, the examination was fortunately completed nearly all during this month. Early in April a pearl fishery was unexpectedly advertised on the Ceylon coast, and as usual our chank divers at once stopped work and proceeded there; to this I could offer no objection. The number of chanks fished in the early part of the season was equal to the average of former years, but in March they became scarce and the divers were glad to leave for more remunerative work. I hope we may obtain a better price for those that we have in store in consideration of the number being less than usual.

3. I am glad to state that the prospects of the Tholayiram Par continue most promising. I have visited this bank on five different occasions, and each time the appearance of the oysters in size and number has been most satisfactory; the weight of shells has continued to increase 10, now weighing 10½ oz against 8½ in March last; the size is 2½ to 3 inches when in the same month in 1886 it was 2½ to 2¾. The oysters taken up at each visit have been washed, and I consider the yield of pearls as good as could be expected, and have no doubt that there will be an appreciable difference noticed when a sample is again removed in November, judging from the date when these oysters were first found and their present appearance. I am quite of opinion that the south part of the bank should be fished not later than March next, and that with this intention in view all necessary arrangements be made for holding the fishery, and putting up the temporary houses, kottos, &c., on the spot which was used on previous occasions situated about two miles to the north of this town.

4. The quantity of oysters on the bank is so very large that I do not think it possible to calculate the number with even an approach to accuracy. On my last examination when you were good enough to accompany me, the two divers made out that in some places they were quite 300 to the square yard, though I feel sure that it is hardly possible that they can lie in this excessive quantity except in specially favored parts, and it will be safer to take a much smaller estimate for basing any calculations; upon the bottom must in many places consist of patches of sand where the spat has not fallen, also many oysters are sure to die off before reaching maturity (though it was noticed that this did not amount to one per cent. of those that were brought up for our inspection), but I would prefer to consider 100 to the square yard on a basis, and the bank to cover 2½ square miles of ground; this would give us 774,400,000 as the number which we have to arrange to lift.

5. In my letter of the 10th January, I considered that the day's work of one diver would be not more than 2,000 oysters. In the late fishery at Ceylon I found that in some cases this was slightly exceeded, the oysters lying very thick. Our chank divers tell me that on the Tholayiram Par they are more abundant than they were on Ceylon, but I am more inclined to consider that the spat must have fallen equally in both places and make every allowance for our divers' natural preference for their own banks.

6. I reckon that the number of divers on this coast is about 1,200; in view of the lucrative fisheries coming on many young men will learn, and have no doubt that by March next this number will be increased to probably 1,500. I may mention in support of this that the earnings of each diver at the late fishery averaged over Rs. 100. This I know from some of them having deposited their money with me for safe custody when in Ceylon and who had no reason for keeping back the truth; with such an inducement as this, we may be sure that pearl diving will be more popular during the next and following years than it has been. As, however, it is certain that in Ceylon there will also be a fishery which will divide the divers with us, I would suggest that some means may be devised to obtain as many as will come from the Persian Gulf and also Jeddah. Notices may also be given at the West Coast ports at the proper time and all divers invited to come over. At Calicut there are many of the Laccadive islanders who are good divers; these men will perhaps come if they are told of the prospects before them. I am not

inclined to suggest that railway passes be offered, as there would be a difficulty in recovering the value when the fishery was concluded, and which would interfere with the boat owners in their exertions to procure men.

7. The number of suitable diving boats that can be obtained is about 200; these will come from the ports in Tanjore, Madura and this district; a few may also come from Ceylon, though they are more likely to go to the fishery on their own coast. This number is more than sufficient for all the divers that are likely to be available.

8. I would beg to recommend that the divers' share be at once fixed at one-third of all oyster fished in boats which have been properly licensed for this purpose; this is the proportion given in the last fisheries here and also in Ceylon.

9. The temporary buildings needed will consist of—

- (1) A Government kattoo 500 feet × 400 with divisions 24 × 12 for 100 boats matted and covered with a light pandal; the present existing platforms to be repaired and covered also with a light pandal; an office 25 × 15, also store-room 20 × 15. The kattoo fence should be of cadjan and strong sticks and 9 feet high from the ground level, the outside lightly covered with thorns.
- (2) Auction-room with cutcherry and treasury combined; this should be 30 feet square and the part for the two latter offices partitioned off.
- (3) House of three rooms for the Collector or officer in chief magisterial charge with cook-room, &c.
- (4) House for the Superintendent of Pearl Banks and Fishery similar to
- (5) Beach Master's office and Custom house.
- (6) Hospital and Assistant Apothecary's quarters.
- (7) Police Inspector and Kattoo Superintendent and lines for Police guard.
- (8) Fishery ground to be levelled and cleared up.
- (9) Lines for peons, counters and coolies. Proper latrines, &c., for both the public and for Government servants.
- (10) Good-water wells.

I would suggest that arrangements to put up these temporary buildings as early as possible in the month of January next so as to have all ready not later than the 25th February be made, contingent upon the fishery being fixed to take place in March, which will be determined in November. A budget estimate of Rs. 12,000 for this purpose, establishment and other expenses may be provided in addition to the usual annual estimate for pearl fishery.

10. The uncertainty of the land wind coming off at night is such that we cannot, with the prospect of such a large fishery, depend upon it for taking the boats off to the bank in proper time; to make this certain I would beg that the Marine department arrange to permit us to have the use of the Government steam tug *Mulras* for such time as she may be required; this vessel being powerful can take, if necessary, the whole fleet of diving boats in tow off to the bank should the wind not be favorable; in this work the *Northcote* can also assist, but her steam power is small for the purpose of towing. I must ask to be excused for again referring to this, but it is a matter of much consequence. In returning there is no likelihood of any difficulty, the sea breeze seldom failing.

11. A list of the establishment that will be required can be submitted for sanction later when the plans are more matured.

12. For the due protection of the oysters on the Tholayiram Par, the guard boat *Pearl* proceeds to it each day that the wind permits and sees that no canoes loiter near or on it. All fishing canoes proceeding to deep water use a small iron anchor, and they are frequently inspected on coming on shore. I have prohibited the use of all stone anchors in canoes going outside of five fathoms. With these precautions I do not think it likely that any harm can come to the bank from the fishermen; the heavy south-west monsoon is now also at hand during which canoes do not venture far to sea.

## ENCLOSURE No. 2.

STATEMENT showing the names of pearl banks examined and their condition during the years 1884, 1885, 1886 and 1887.

| No. | Names of banks.                   | Fathoms.   | 1884.                                                                                          | 1885.                                                                                               | 1886.                                                                                                            | 1887.                                                                                                             |
|-----|-----------------------------------|------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 1   | Pāmban Karia Par ..               | 4½ to 5    | ....                                                                                           | April.—Nil.                                                                                         | 12th March.—Few oysters of ½ and 2 inches; of no value.                                                          | 10th March.—117 dives; six oysters of ½ and ¾ an inch.                                                            |
| 2   | Do. Peria Par ..                  | ..         | ....                                                                                           | ....                                                                                                | 12th March.—Several dives made; sea-wood. In some places on the bank quantities of false spat found.             | 10th March.—Fifty-nine dives; five oysters from ½ an inch to 3 inches.                                            |
| 3   | Velangu Par ..                    | 4½ to 6    | ....                                                                                           | April.—Weeds; no spat; bare; three young oysters in two dives.                                      | 12th March.—Thirty-one dives; no oysters; much seaweed.                                                          |                                                                                                                   |
| 4   | Musal Thiru Par ..                | 5, 6 and 7 | ....                                                                                           | April.—False spat plentiful.                                                                        | ....                                                                                                             | 12th March.—Sixty-five dives; four oysters, varying from ½ to ¾ of an inch in size.                               |
| 5   | Chokva Karia Par ..               | 6 to 7     | ....                                                                                           | Do.—Weeds, diminishing.                                                                             | ....                                                                                                             | Do.—Twenty-five dives; blank.                                                                                     |
| 6   | Kilakalai Vallamalai Velangu Par. | 5 to 6     | ....                                                                                           | Do.—Killikoy; seaweed; useless.                                                                     | ....                                                                                                             | Do.—Fifty-seven dives; one oyster of ¾ of an inch; weed and chully.                                               |
| 7   | Vallamalai Karai Par ..           | 5          | ....                                                                                           | April.—Blank ..                                                                                     | 10th March.—Blank ..                                                                                             | 12th March.—Eleven dives; seaweed.                                                                                |
| 8   | Anna Par ..                       | 4 to 5     | ....                                                                                           | Do.—do. ..                                                                                          | Do. do. ..                                                                                                       | 9th and 12th March.—Thirty-four dives; blank.                                                                     |
| 9   | Nallathand Thiru Par ..           | 5 to 6     | ....                                                                                           | Do.—Two examinations; seaweed only.                                                                 | ....                                                                                                             | These banks are also called Anna Par. They are quite bare.                                                        |
| 10  | Upputhanni Thiru Par ..           | 6½         | ....                                                                                           | April.—Blank ..                                                                                     | ....                                                                                                             |                                                                                                                   |
| 11  | Valinukam Par ..                  | 5 to 6     | ....                                                                                           | Do.—The bank is not included in Mr. Thomas' report; a few killikoy.                                 | ....                                                                                                             |                                                                                                                   |
| 12  | Do. Thindu Par ..                 | 7          | ....                                                                                           | April.—The bank is not included in Mr. Thomas' report; bare.                                        | ....                                                                                                             |                                                                                                                   |
| 13  | Kumulam Par ..                    | 4½ to 5    | ....                                                                                           | April.—Blank ..                                                                                     | 10th March.—Thirty-four dives; no oysters; weed and stones.                                                      | 9th March.—Thirty-three dives; no oysters, but weed and chully. found;                                            |
| 14  | Vembar Peria Par ..               | 6 to 7     | ....                                                                                           | Do. do. ..                                                                                          | 10th March.—Seventy-seven dives; a few oysters, ½ to ¾ inch; plenty of suran.                                    | 8th March.—Two oysters only found; much suran; no value. These two banks are all the same.                        |
| 15  | Vaippar Peria Par ..              | 6 to 7     | ....                                                                                           | ....                                                                                                | 10th March.—Very few oysters; of no value; plenty of suran.                                                      | The Parmundadies call them by the different names, as they go to them either from Vaippar or Mokur; eighty dives. |
| 16  | Vembar Karai Par ..               | 6          | ....                                                                                           | April.—Blank ..                                                                                     | ....                                                                                                             | 12th March.—Seven dives on Vembar Peria Par; blank.                                                               |
| 17  | Vaippar Karai Par ..              | 6½         | March.—Plenty of oysters of one year ago, many dead amongst smaller size and mixed with suran. | March.—Probably affected by river water; average thirteen oysters to a dive; apparently new deaths. | 10th and 11th May.—Seventy-eight dives made. Very old empty shells and small coral stones; one oyster of 1 inch. | 8th March.—Sixty-two dives; no oysters; much suran.                                                               |

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| 18 | Devi Par ..                 | 6½ to 7½ .. | March.—Thick oysters and plenty of suran.                                                                                                               | March, April and May.—Four examinations; oysters plentiful, but as many empty shells as live oysters. | 9th March.—No oysters; no suran. 17th November.—No oysters; plenty of suran.                                                                                                       | 8th March.—Four oysters of ½ and 1 inch; plenty of suran; 33 dives.                                |
| 19 | Fernandu Par ..             | 6 to 6½ ..  | March.—Good number of oysters of less than one year.                                                                                                    | Do. do. do.                                                                                           | 9th March.—No oysters. 10th November.—No oysters; much suran.                                                                                                                      | 8th March.—Two oysters of 1 inch. This bank is now covered with suran; 4 dives.                    |
| 20 | Padutha Marikan Par ..      | 6 to 6½ ..  | Do. do.                                                                                                                                                 | March, April and May.—Oysters plentiful, but as many empty shells as live oysters.                    | 9th March.—Found eleven dead oysters of 2 and 2½ inches; six live oysters of ½ an inch; much weed in some places.                                                                  | 8th March.—Much suran and some killikoy; seven oysters of ½ inch; 27 dives.                        |
| 21 | Padutha Marikan Thundu Par. | 6½ ..       | Do. do.                                                                                                                                                 | March and April.—Two examinations; both found suran only.                                             | 17th November.—Four oysters of ½ and 1 inch on weed; no suran.                                                                                                                     |                                                                                                    |
| 22 | Tuticorin Coda Par ..       | 7½ ..       | March.—Some oysters; the quantity does not seem large; found some suran and broken shells.                                                              | March.—Tina, suran; oysters few; apparently a valuable bank.                                          | 9th March.—Bare 3rd and 8th March.—All suran.                                                                                                                                      | 8th March.—This bank is now covered with suran; 23 dives.                                          |
| 23 | Cruxian Par ..              | 5½ to 6½ .. | March.—A very few oysters.                                                                                                                              | March and April.—Chanks on rock; suran; killikoy.                                                     | 19th October.—Found covered with suran.                                                                                                                                            | 16th March.—One oyster of ½ an inch; suran and weed; 23 dives.                                     |
| 24 | Cruxian Thundu Par ..       | 6 to 6½ ..  | March.—Plenty of oysters of one year ago, clean looking; found some dead shells.                                                                        | Do. do. do.                                                                                           | 3rd and 8th March.—Forty-nine dives; no oysters; no suran.                                                                                                                         | 16th March.—Seventy-two dives; nine oysters varying in size ½ to 1½ inch; much suran and killikoy. |
| 25 | Vanthivu Arupagun Par ..    | 5½ to 6½ .. | 21st October.—A few live oysters of 1 inch and under in size; lots of empty shells; live chanks; everything brought up covered with suran and killikoy. | March.—Suran ..                                                                                       | 19th October.—Plenty of suran. 3rd and 8th March.—Forty-nine dives; no oysters; no suran.                                                                                          | 16th March.—Forty-nine dives; 14 oysters of ½ an inch; much suran and weed.                        |
| 26 | Nagara Par ..               | 6½ to 7 ..  | March.—No oysters ..                                                                                                                                    | March.—Bare ..                                                                                        | 3rd March.—Twenty-three dives; no oysters; no suran.                                                                                                                               | 29th March.—Twenty-five dives; suran and weed.                                                     |
| 27 | Ootiti Par ..               | 7½ ..       | Do. do.                                                                                                                                                 | Do. do. do.                                                                                           | 2nd March and 14th April.—Several dives; oysters of 1 inch in size mixed with empty shells, all of same size; injured by fish; one chank with eight oysters and some empty shells. | 16th March.—Thirty-seven dives; eleven oysters of ½ an inch; much suran, killikoy, weed.           |
| 28 | Ooduravi Par ..             | 7½ to 8½ .. | October.—Bare and suran ..                                                                                                                              | Do. do. do.                                                                                           | 2nd March and 14th April.—Several dives; a few oysters of 1 inch in size, much mixed with empty shells.                                                                            | 16th March.—Twenty-six dives; much suran and weed.                                                 |
| 29 | Kiatti Par ..               | 6½ to 7½ .. | March.—No oysters ..                                                                                                                                    | March.—Suran; a few empty oyster shells.                                                              | 15th April.—Oysters of 1 inch in size and a number of empty shells of no value.                                                                                                    | 29th March.—Thirty-one dives; forty oysters varying in size ½ to ¾ inch; much suran.               |

Statement showing the names of pearl banks examined and their condition during the years 1884, 1885, 1886 and 1887—continued.

| No. | Names of banks.           | Fathoms.  | 1884.                                                                                                                                                                                                                                                                                                                                     | 1885.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1886.                                                                                                                                                                                                                                                                                                                                                                                    | 1887.                                                                                                                                                                                                                                                                                                               |                                                                                             |
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| 30  | Athuvai Arupagam Par      | 6½ to 7   | March.—No oysters                                                                                                                                                                                                                                                                                                                         | March and April.—Two inspections; false spat; plentiful.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 6th March and 15th April.—Two oysters of ½ of an inch in size; weed; some empty oyster shells.                                                                                                                                                                                                                                                                                           | 29th March.—Twenty-five dives; two oysters of 1 inch; suran.                                                                                                                                                                                                                                                        |                                                                                             |
| 31  | Athombadu Par             | 7½ to 9   | March.—Large quantities of oysters of two years age with dead small ones.<br>24th October.—One live oyster of two years age; several dead oyster shells of two years age; two live chanks; two empty pina shells with suran covering everything.                                                                                          | March and April.—Two inspections; chanks on rock and empty shells; no live oysters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 22nd October.—All suran.<br>6th March and 28th April.—Two inspections; seventy-six dives; no oysters; no suran.<br>8th October.—The bank is thickly covered with suran.                                                                                                                                                                                                                  | 12th May.—No oysters; suran dead in some places; one chank; thirty-seven dives.                                                                                                                                                                                                                                     |                                                                                             |
| 32  | Pasi Par and Patherai Par | 7½ to 9   | ....                                                                                                                                                                                                                                                                                                                                      | March and April.—Bare                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 25th April.—No oysters; bank bare; fifty-six dives.                                                                                                                                                                                                                                                                                                                                      | 11th May.—Forty dives; one oyster of ½ an inch; pina, chank and much suran.                                                                                                                                                                                                                                         |                                                                                             |
| 33  | Kuthadai Par              | 7½ to 8½  | March.—Plenty of six months' oysters and some dead shells.                                                                                                                                                                                                                                                                                | March.—Perfectly bare                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6th and 24th March.—Sixty-eight dives; a few oysters; many broken shells; suran; no value at present.                                                                                                                                                                                                                                                                                    | 13th May.—Much suran; two chanks; four oysters of 1 inch on dead chank; thirty-two dives made.                                                                                                                                                                                                                      |                                                                                             |
| 34  | Wicks' Bank               | 9½ to 10  | ....                                                                                                                                                                                                                                                                                                                                      | March and May.—Two inspections; young oysters, size ½ inch to 2¼ inches, plentiful; pina plentiful; two chanks alive.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 22nd October.—All suran.<br>4th April.—Sixty-one dives; a very few oysters, size ½ inch to 1½ inches; a good number of pina on the bank, which is not of any great extent; suran; two dead chanks; one live chank; weed; five empty shells from 2 to 2½ inches in size.                                                                                                                  | ....                                                                                                                                                                                                                                                                                                                |                                                                                             |
| 35  | Tholayiram Par            | 5½ to 10½ | March.—Plenty of oysters of two sizes of one year age, clean and healthy.<br>October.—Found literally covered with fine healthy oysters of about 2 inches in size on the centre of the bank in from 7½ to 8½ fathoms; no suran whatever to be found. On the southern edge in 9 to 10 fathoms no oysters found; only sand; one live chank. | March, April and May.—Seven inspections; satisfactory; oysters clean and apparently growing well; free from trouble of any kind; the largest live oysters found measured 3 inches; average 2½ inches; bigger fish; oysters covered with short seaweed.<br>12th October.—Plenty of oysters from 2 to 2½ inches.<br>28th September.—The oysters were opened and pearls found of small size. There seems to be much suran round the bank and some of the oysters had it on them.<br>6th and 15th November.—Two inspections; lifted 5,000 oysters for washing; the oysters look healthy and were with difficulty pulled from the rocks; the proportion of empty shells was trifling; on the south part of the bank the oysters are mixed with suran which does not appear so far to have done any harm; there are also a few young oysters of ½ an inch. | 8th, 9th and 10th April 1886.—Large number of oysters from 2½ to 2¾ inches; the proportion of empty shells was trifling; the larger size on sand, the smaller on rock; weed found on a buoy placed on the north-east end of the bank in November last; oysters varying in size from ½ to 1½ inches, making a total number of 804 oysters. This bank will be ready for a fishery in 1888. | 25th and 28th March.—One hundred and sixteen dives; oysters in large quantity measuring from 2½ to 3 inches; thirteen empty shells only found; lifted 745 oysters on this bank; plenty of fish.<br>28th April.—Oysters appear to be plentiful, 360 to the square yard in some places. Lifted 372 oysters; no suran. | 7th March.—Much covered with suran; three oysters of 1½ inches; no value; fifty-four dives. |
| 36  | Vadda Ombathu Par         | 8 to 8½   | March.—One oyster found and some suran.                                                                                                                                                                                                                                                                                                   | March.—Bare; seaweed; no spat.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4th and 24th March.—Thirty-two dives; no oysters.                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                     |                                                                                             |

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| 37 | Saith Ombathu Par<br>Pali Pundu Par<br>Cunna Ruli Pundu Par                            | 8 to 8½<br>8<br>7½ to 8½        | March.—Blank                  | March.—Young oysters on sandy bottom attached to pina shells; also on rock; all healthy looking; some suran.<br>April.—Suran, killikoy, useless. | 4th and 24th March and 5th April and 1st May.—One hundred and one dives; nine oysters from 1½ to 2½ inches in size; chanks, weed.<br>5th March and 1st May.—Forty-nine dives; no oysters; weed, chanks.<br>1st May.—A very small bank of no value.<br>6th March and 1st May.—Thirty-three dives; no oysters; weed, chanks.<br>5th and 8th March.—Thirty-five dives; no oysters, no suran or killikoy; some pieces of rock.<br>6th March and 7th April.—One hundred and sixty-five dives; six oysters of 1 inch to 2¼ inches.<br>21st October.—Banks covered with suran entirely.<br>5th April.—This bank is so small that it may be called bare.<br>6th April.—One diver brought twenty-three oysters of 1 and 1½ inches and again one oyster of 1 inch; then got twenty to thirty oysters each time; but the bank is of very small extent and of no value.<br>5th April.—A few oysters of 1½ inches with dead oysters and suran; one part fifteen and twenty to a dive intermixed with suran; forty-three dives.<br>6th April.—A few oysters on these banks of 1 and 1½ inches and ½ and ¾ of an inch, not sufficient to be of any value; one diver got forty-eight oysters, another twenty-eight; ninety-two dives. On the bank called Nilankalu Par, sixty-two dives made; found sixteen oysters. | 7th March.—Ninety-seven dives; some killikoy; much suran; twenty-four oysters of ½ and 1 inch.<br>29th March.—Thirty-two dives; three oysters of ½ and 1 inch; suran.<br>....<br>29th March.—Twenty-two dives; suran.<br>29th March.—Thirty-one dives; suran.<br>7th March.—No oysters; much suran of no value; thirty-one dives.<br>....<br>....<br>.... |
| 38 | Alluva Par                                                                             | 6½ to 7                         | ....                          | ....                                                                                                                                             | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ....                                                                                                                                                                                                                                                                                                                                                      |
| 39 | Volangu Alluva Par                                                                     | 8½                              | ....                          | ....                                                                                                                                             | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ....                                                                                                                                                                                                                                                                                                                                                      |
| 40 | Kanna Thivu Arupagam Par                                                               | 5½ to 6                         | ....                          | ....                                                                                                                                             | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ....                                                                                                                                                                                                                                                                                                                                                      |
| 41 | Thundu Par                                                                             | ..                              | ....                          | ....                                                                                                                                             | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ....                                                                                                                                                                                                                                                                                                                                                      |
| 42 | Nenjurichan Par<br>Par Kudanjan Par<br>Meia Ombathu Par                                | 8<br>7½ to 8½<br>8½ to 8½       | ....                          | ....                                                                                                                                             | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ....                                                                                                                                                                                                                                                                                                                                                      |
| 43 | Pinnacoli Solhan Par                                                                   | 8 to 9                          | ....                          | ....                                                                                                                                             | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ....                                                                                                                                                                                                                                                                                                                                                      |
| 44 | Sundamaram Ruditha Par                                                                 | 9 to 9½                         | March.—No oysters, but weed.  | April.—A very small bank; bare.<br>April.—Large suran plentiful; also chanks.                                                                    | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ....                                                                                                                                                                                                                                                                                                                                                      |
| 45 | Iraithiru Cudamuthu Par, Nandukudamuthu Par.                                           | 7½ to 8½                        | ....                          | March.—Quite bare; no suran or killikoy; no spat.                                                                                                | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ....                                                                                                                                                                                                                                                                                                                                                      |
| 46 | Kovilpuditha Puthu Par<br>Sanguria Puthu Par<br>Nilankalu Par<br>Sothu Curia Ruthu Par | 9½ to 10<br>10<br>9 to 9½<br>10 | ....                          | April.—Blank                                                                                                                                     | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ....                                                                                                                                                                                                                                                                                                                                                      |
| 47 | Kudamuthi Par<br>Rajavukku Sippiothicha Par<br>Saith Kudamuthi Par                     | 7½ to 8½<br>8 to 8½<br>7½ to 8½ | March.—No oysters, but suran. | March.—Blank; suran on the former; none on the latter.                                                                                           | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ....                                                                                                                                                                                                                                                                                                                                                      |

Statement showing the names of pearl banks examined and their condition during the years 1884, 1885, 1886 and 1887—continued.

| No. | Names of banks.                                            | Fathoms.                     | 1884.                                                                             | 1885.                                                                                                                                                                                                                                                                                                                                                                                                                        | 1886.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1887.                                                                                                                                                                                                                                                                                                                                                   |
|-----|------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 48  | Naduval Malai Puditha Par ..<br>Peria Malai Puditha Par .. | 8 to 8½<br>8½ to 10          | ....                                                                              | March.—Two oysters, 2 inches and 1 inch, respectively, only found on the former; the latter bare.<br><br>March.—A few small live oysters.                                                                                                                                                                                                                                                                                    | 13th May.—Seventy-five dives made on the former; two oysters of 1 inch; some empty shells of 1½ to 2 inches; many chanks; sixty-five dives on the latter; bare.<br><br>25th and 26th March.—A very few oysters; many broken shells; weed, suran, killikoyas; one oyster of 2 inches; fifty-four dives. On Puthu Par forty dives made; a very few oysters, varying in size from ½ to 1 inch; empty shells; weed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 17th March.—On Naduval Malai Puditha Par twenty-one dives; blank.<br><br>17th March.—One hundred and seventy-four dives made on these banks. On Puthu Par seventy-one oysters of ½ to 1½ inches; much suran in all parts. On Kadian and Kanava Pars seven oysters of ½ to 1½ inches; much suran.                                                        |
| 49  | Kadian Par ..<br>Kanava Par ..<br>Puthu Par ..             | 7 to 7½<br>7½ to 8<br>7 to 7 | Covered with suran and a few oysters intermixed and some of them dead.            | March.—Two to seven live oysters to a dive; several empty shells; the largest, apparently fresh, measured 2½ inches; empty shells intact; much suran.<br><br>March.—Oysters plentiful, measuring from 1½ to 2½ inches; 10 per cent. empty shell; some apparently bitten by fish and averaging 2 inches in size; short seaweed on oysters plentiful.<br><br>April.—Seaweed and coral; nothing else.<br><br>April.—Blank .. .. | 26th March.—Broken shells; suran; one live oyster of 1½ inches.<br><br>26th March.—Ninety-two dives. In some parts there are oysters in fair quantity of ½ inch (ten to twenty at a dive), but many are already dead; suran exists also; the bank of little or of no value; last year oysters all gone.<br><br>25th March.—Eighty dives; fifty-four oysters of 1½ inches in size; suran; empty shells, all broken.<br><br>29th and 30th April.—Several dives; large number of oysters from ½ to 1½ inches in size attached to the small coral stones mixed with some dead shells; a very few weeds. The appearance of the oysters does not look healthy.<br><br>26th March.—Forty-seven dives made; last year oysters are all gone, now there are some young ones of ½ inch and 1 inch; some dead shells also; divers got thirty-two oysters (live) of 1 inch; most part are already dead.<br><br>29th April.—Fifty-two dives; no oysters; no suran; weed, chully, chaulks. | 18th March.—Seventy-four dives; some empty oyster shells of 1 to 1½ inches; suran; weed; round pieces of lime.<br><br>18th March.—Sixty-eight dives; some empty oyster shells of ½ to 1 inch; no value.<br><br>18th March.—Fifty-five dives; one oyster of 1½ inches; four empty oyster shells of ½ to 1½ inches; a large quantity of small round lime. |
| 50  | Karia Karwal Par ..                                        | 8 to 8½                      | March.—Suran with a few young oysters mixed.                                      | March.—Two to seven live oysters to a dive; several empty shells; the largest, apparently fresh, measured 2½ inches; empty shells intact; much suran.                                                                                                                                                                                                                                                                        | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ....                                                                                                                                                                                                                                                                                                                                                    |
| 51  | Velango Karwal Par ..                                      | 7½ to 8                      | March.—Considerable quantity of oysters of six months with dead shells and suran. | March.—Oysters plentiful, measuring from 1½ to 2½ inches; 10 per cent. empty shell; some apparently bitten by fish and averaging 2 inches in size; short seaweed on oysters plentiful.<br><br>April.—Seaweed and coral; nothing else.<br><br>April.—Blank .. ..                                                                                                                                                              | 26th March.—Broken shells; suran; one live oyster of 1½ inches.<br><br>26th March.—Ninety-two dives. In some parts there are oysters in fair quantity of ½ inch (ten to twenty at a dive), but many are already dead; suran exists also; the bank of little or of no value; last year oysters all gone.<br><br>25th March.—Eighty dives; fifty-four oysters of 1½ inches in size; suran; empty shells, all broken.<br><br>29th and 30th April.—Several dives; large number of oysters from ½ to 1½ inches in size attached to the small coral stones mixed with some dead shells; a very few weeds. The appearance of the oysters does not look healthy.<br><br>26th March.—Forty-seven dives made; last year oysters are all gone, now there are some young ones of ½ inch and 1 inch; some dead shells also; divers got thirty-two oysters (live) of 1 inch; most part are already dead.<br><br>29th April.—Fifty-two dives; no oysters; no suran; weed, chully, chaulks. | 18th March.—Seventy-four dives; some empty oyster shells of 1 to 1½ inches; suran; weed; round pieces of lime.<br><br>18th March.—Sixty-eight dives; some empty oyster shells of ½ to 1 inch; no value.<br><br>18th March.—Fifty-five dives; one oyster of 1½ inches; four empty oyster shells of ½ to 1½ inches; a large quantity of small round lime. |
| 52  | Thundu Par ..                                              | 9 to 9½                      | ....                                                                              | April.—Blank .. ..                                                                                                                                                                                                                                                                                                                                                                                                           | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ....                                                                                                                                                                                                                                                                                                                                                    |
| 53  | Trichendore Tunthotta Par ..                               | 7½ to 8½                     | ....                                                                              | April.—Blank .. ..                                                                                                                                                                                                                                                                                                                                                                                                           | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ....                                                                                                                                                                                                                                                                                                                                                    |
| 54  | Odacalai Par ..                                            | 8½ to 8½                     | ....                                                                              | April.—Blank measured 1½ miles north and south; oysters sparse on rock, about 10 to 20 to the square yard; size 1 to 2½ inches; colored red like the coral to which they were attached; empty shells bitten.                                                                                                                                                                                                                 | 26th March.—Forty-seven dives made; last year oysters are all gone, now there are some young ones of ½ inch and 1 inch; some dead shells also; divers got thirty-two oysters (live) of 1 inch; most part are already dead.<br><br>29th April.—Fifty-two dives; no oysters; no suran; weed, chully, chaulks.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 18th March.—Fifty-five dives; one oyster of 1½ inches; four empty oyster shells of ½ to 1½ inches; a large quantity of small round lime.                                                                                                                                                                                                                |
| 55  | Chowdi Par ..                                              | 8½ to 9                      | ....                                                                              | April.—Blank .. ..                                                                                                                                                                                                                                                                                                                                                                                                           | ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ....                                                                                                                                                                                                                                                                                                                                                    |

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|----|----------------------------|----------|------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 56 | Sandamacoil Puditha Par .. | 8½ to 9  | .... | April.—Three or four to a dive ..                                                                                                               | 27th March.—A large quantity of oysters of ½, ¾ and 1 inch; the divers brought up 6, 21, 30, 50 and 125 oysters at a dive; some of ¾ of an inch in size. This is a valuable bank, but the dead shells are already to be found; the oysters look clean and moderately healthy. | 19th March.—This bank is also called Surakku Ombathu Par; a very few oysters on it.          |
| 57 | Odacalai Thundu Par ..     | 9½       | .... | ....                                                                                                                                            | 30th April.—Several dives; a very few oysters intermixed with many dead oyster shells, weed and chully.                                                                                                                                                                       | ....                                                                                         |
| 58 | Paracherry Puthu Par ..    | 6 and 8½ | .... | ....                                                                                                                                            | 30th April.—Several dives; a very few oysters of ¾ inch; a large quantity of empty shells; weed, suran, sponge.                                                                                                                                                               | 19th March.—Thirteen dives; blank.                                                           |
| 59 | Theradi Puditha Par ..     | 8½ to 8½ | .... | April.—Seaweed and old empty shells.                                                                                                            | 27th March.—Bare .. ..                                                                                                                                                                                                                                                        | 19th March.—Forty-six dives; blank; some false spat.                                         |
| 60 | Senman Patti Par ..        | 8½ to 9  | .... | April.—Seaweed; no spat ..                                                                                                                      | 27th March.—This bank is joined on to the large Manapaud Par and is of no value.                                                                                                                                                                                              | 19th March.—Seventy-two dives; blank                                                         |
| 61 | Surukku Ombathu Par ..     | 6½ to 8  | .... | April.—Six dives; three oysters, 2 inches, ¾ and ¾ of an inch, respectively; two kinds of seaweed, tree and a long, broad and flat-leaved kind. | 30th April.—One hundred and thirty-nine oysters from ½ to 1½ inches in size mixed with some recently dead oysters; chully and weed.                                                                                                                                           | 19th March.—Thirty one dives; one oyster of 2 inches; some empty oyster shells of ¾ an inch. |
| 62 | Manapaud Peria Par ..      | 6½ to 7  | .... | April.—Blank .. ..                                                                                                                              | 27th March.—No oysters found; not a likely place at any time.                                                                                                                                                                                                                 | 19th March.—Thirteen dives; blank.                                                           |

Resolution—dated 14th July 1887, No. 340.

Submitted for the orders of Government.

2. The latest examination of the Tholayaram oyster bank shows that it continues to be "most promising," and it is expected that its southern portion will be ripe for fishing not later than March 1888. Mr. Phipps estimates the fishery at 774,400,000 oysters, which at Rs. 20 a thousand, which is a fairly low figure, would mean 103 lakhs for the Government two-thirds share, though it may well be much lower in the face of such a large fishery, and the difficulty of fishing it will be seen below. Mr. Phipps counts on a local supply of 1,500 divers and 200 boats, and hopes that more divers may be induced to come from the Persian Gulf, Jeddah and the Laccadives. These points will be discussed below.

3. Mr. Phipps proposes that the diver's share should, as heretofore, be fixed at one-third of the takes of oysters. This is the unvarying proportion and in the Board's opinion should be adhered to.

4. He asks for a budget estimate of Rs. 12,000 in addition to the usual annual estimate. The Collector supports it and the Board fully concur.

5. He makes a strong point of the services of the steam tug *Madras* being necessary, and the Board can, from personal knowledge, confidently assure the Government that it is indispensable for profitable work.

6. The question of the number of divers wanted and the inducement offered is one which Mr. Phipps should have estimated with more detail before suggesting the inviting of divers from such distances as the Persian Gulf, Jeddah and the Laccadives. It is obvious also that we should give those localities a distinct idea of how many divers we want from them, and whether they should bring their own boats. Given that the local supply will be 1,500 divers and that each diver can lift 2,000 oysters in a day, the daily lift may be 3,000,000, and the question then turns on the duration of the fishery. It is dependent on the duration of the fair weather with clear water in which the divers can see at the bottom and is essentially a Port officer's question to be estimated from past experience. Given that we may hope for a month and a half of fine weather or roughly forty days' fishery excluding Sundays, an estimate which Mr. Phipps will correct if erroneous, then the total lift will be 120,000,000, and out of the available fishery of 774,400,000 as many as 654,400,000 will remain untouched for want of power to harvest them. Four-fifths of the fishery will remain unfinished unless we have an additional supply of 6,000 divers with 600 boats.

7. A boat ordinarily holds from eight to ten divers; therefore 200 boats will not suffice for many more than the local supply of divers, and foreign divers must bring their own boats unless Mr. Phipps could make other arrangements.

8. Again it does not seem probable that earnings of Rs. 100 will suffice to draw men from the Persian Gulf and Jeddah or even from the Laccadives bringing their own boats.

9. This, the crucial difficulty of the fishery, should have Mr. Phipps' special attention, and as he advocates the use of native divers only it is the more incumbent on him to consider the practical details of their supply, especially in the face of the Ceylon competition.

10. There is no question that every publicity should be given to the coming fishery, so as to draw together a goodly concourse of merchants and fair competition in purchasing our oysters; but it is not clear how the date can be fixed while it is still contingent on the November examination. Mr. Phipps should therefore draw up for approval a general notice attracting attention to the extent, locality and probable date of the fishery, and promising that it will be followed by another notice giving the exact date decided on after the November examination, and he should enter into detail of how and where it should be published.

11. The question of establishment will also have to be very carefully considered if we are to harvest rapidly without hitch, for even with only the local supply of divers three million oysters a day to be divided in shares to be counted or measured and auctioned and removed ready for the next day's three million is a Herculean task

without a thoroughly well organized and sufficient establishment. As the accommodation must be suited to the establishment, to the number of divers and to the extent of the daily takes, these questions cannot be postponed.

(True Copies and Extract.)

(Signed) M. HAMMICK,  
Acting Secretary.

To the Secretary to Government, Revenue Department.

Copy to the Collector of Tinnevely.

" " Superintendent of Pearl Banks, Tuticorin.

Order—dated 15th August 1887, Mis. No. 4752, Revenue.

Recorded.

2. A detailed statement of what is required for the fishing of the Tholayaram oyster bank should be submitted to Government as soon as the Board have received the necessary information on the subject.

(True Extract.)

(Signed) J. F. PRICE,  
Ag. Secretary to Government.

To the Commissioners of Land Revenue.

Read—again the following G.O., dated 15th August 1887, Mis. No. 4753, Revenue:—

Read—the following Proceedings of the Board of Revenue (Land Revenue), dated 14th July 1887, No. 341:—

Read—the following letter from G. A. PHIPPS, Esq., Superintendent of Pearl Banks, to the Collector of Tinnevely, dated Tuticorin, 21st April 1887, No. 17:—

In reply to your letter, No. 376, dated 18th instant, I have the honor to inform you that I do not think it probable that any of our native divers would consent to use a diving dress, as they have always had an extreme aversion to that mode of diving. On several occasions I have endeavoured to persuade one or more to try it, but was unsuccessful, and after the late fatal accident have very little hope of now succeeding.

2. With regard to its use by the Blacks at Thursday Island as stated in the extract from Romilly's report, I beg to mention that the fishing there is for the large pearl shell which is so much used for the button manufacture, and not for the small pearl oysters such as are found in this gulf. The large shells are not plentiful or easily found in Torres Straits, and hence the divers have to search the ground for long distances by walking over the bottom; here it is different as the small oysters lie very thick and there is no difficulty except from the continual stooping.

3. At the pearl fishery now going on at Arippe in Ceylon, a Mahomedan, who has a diving apparatus, attempted to work with it; he was obliged to employ a separate boat and crew, four pumpmen and an attender; the first and only day's work resulted in 1,500 oysters, while the other divers working with a stone did very much more at a trifling cost; the use of the dress was therefore given up, and this same man who had learned to dive with a stone in our chank fishery here this last season was getting his 2,000 oysters per day when I left on Tuesday. It is only right to also state that from what his attender told me it appears that his diving apparatus was a very wretched affair; had it been in proper order, he might have done a little better.

4. In regard to the use of the diving dress for getting chanks, the apparatus which I now have was originally the property of the late firm of C. H. R. Cocq and Co., who for many years rented the fishery here; wishing to make it a more paying speculation they imported the machine and obtained a skilled man from England. After a few days' trial, the experiment had to be abandoned as the number of shells

picked up was so trifling that it was at once acknowledged to be a complete failure. As Mr. Cocq and myself had many consultations together before the apparatus was imported, and afterwards I was well conversant with what was then being attempted, the failure of European divers with dress to compete with the native at the small fishery held in Ceylon in November 1884 was, I think, conclusive. Mr. Dennison did have some experience, but, it seems probable, was unable to stand the pressure at a depth of  $9\frac{1}{2}$  fathoms. Again the failure of the Mahomedan to send up when working with a dress an equal number to what he did with a stone, all seem to show that no good is likely to result from any further trial and expenditure in this direction. In this opinion both Mr. Twynam and Captain Donnan agree with me.

Endorsement by J. LEE-WARNER, Esq., Collector of Tinnevely, dated 23rd April 1887, No. 225.

Forwarded to the Board of Revenue for information and orders.

2. After reading Board's Proceedings, No. 619, dated 28th March 1887, I thought it best to write to the Superintendent of Pearl Banks, expressing the hope that he would not allow himself to be unnecessarily discouraged by the sad fate of diver Mr. Dennison, and requesting him to let me know his real opinion on the matter. It seems from this letter that we should be right to depend solely on native divers fishing in the method to which they have been accustomed.

3. I am going to Tuticorin for a few days to look into income-tax assessments there, and I shall have opportunities of discussing the prospects of the fishery with Mr. Phipps at leisure.

Transferred to the Secretary to Land Revenue Commissioners.

REV. BOARD OFFICE (SEP. REV.), (Signed) EDMUND MILLETT,  
26th April 1887. Assistant Secretary.

Reference on the above, dated 18th May 1887.

Referred to Mr. Thorowgood for favor of an opinion.

(Signed) M. HAMMICK,  
Acting Secretary.

To F. N. Thorowgood, Esq., Superintendent, Madras Harbour Works,  
with letter, in original, to be returned.

Read—the following letter from F. N. THOROWGOOD, Esq., Superintendent, Madras Harbour Works, to the Secretary to the Commissioners of Land Revenue, dated Madras, 23rd May 1887, No. 202:—

I have the honor to return herewith the letter from Mr. Phipps of 21st April (No. 17), with the remarks thereon by the Collector of Tinnevely regarding the use of helmet-diving apparatus in the pearl fisheries.

2. I myself cannot believe that there can be any special difficulty in removing pearl-oyster shells from the bottom of the sea by helmet divers. It appears to me that the work becomes simply one of excavating loose material by hand or shovel and placing the material excavated into a receptacle in which it can be hauled up to the surface. This work is being carried on daily on these and other marine engineering works, the material to be removed being large and small stones, mussels and corals instead of pearl oyster shells. I am completely at a loss to see why properly-equipped helmet divers should not excavate pearl oysters with the greatest ease, and at a rate that divers working without the dress ought not to be able to approach. Of course special boats and gear for hauling up the oysters will be necessary.

3. It appears to me probable that the helmet divers have not had a fair chance. A diver in one of Siebe's dresses can stoop or lie down on the sea bottom with perfect ease, and stooping is the diver's ordinary attitude for excavating stone. The unfortunate Mr. Dennison seems to have been unable to stand the pressure due to  $9\frac{1}{2}$  fathoms, but one can never know whether he worked his escape valve properly. He applied to me for a post as a diver on these works shortly before he went to Tuticorin, but I did not consider him experienced enough for the work.

4. With regard to the pressure at 10 fathoms, I can say from experience that it is by no means unbearable (30 lb. on the square inch above the atmosphere), for I have stayed down some time in a pressure of 28 lb. and felt no serious inconvenience.

5. There may be circumstances of which I am ignorant attending the pearl fisheries, but, speaking from long experience of the working of divers, I cannot imagine why the same process which is found to answer for excavating stone, gravel, rock, &c., in foundations of marine works should not apply equally well to the gathering of pearl oysters which are clustered thickly over the sea bottom.

Read—again the following G.O., dated 14th May 1887, No. 476, Revenue:—

Read—Proceedings of the Board of Revenue, dated 28th March 1887, No. 619:—

ABSTRACT.—Submitting for the information of Government, with Board's remarks, papers in connection with the employment of European divers for lifting oysters from the Tholayiram par, Tinnevely district, &c.

Read—letter from the Collector of Tinnevely, dated 30th March 1887, No. 169:—

ABSTRACT.—Submitting in reference to Government telegram of the same date copy of letter to the Board of Revenue (Separate Revenue) regarding the death of European diver Mr. Dennison while engaged in the Tholayiram par.

Read—letter from the Collector of Tinnevely, dated 13th April 1887, No. 203:—

ABSTRACT.—Furnishing the information called for in connection with the death of the European diver Mr. Dennison.

Read—Proceedings of the Board of Revenue (Land Revenue), dated 26th April 1887, No. 310:—

ABSTRACT.—Submitting for information certain papers regarding the death of Mr. Dennison, European diver employed on the Pearl Banks, Tuticorin, Tinnevely district.

Order—dated 14th May 1887, No. 476, Revenue.

The Government have heard with much regret of the death of diver Dennison. The evidence seems to point to the conclusion that this was due to some organic defect, probably heart disease, but it is to be regretted that no *post mortem* examination of the body was made. It should be reported whether the deceased has left any family; and, if he has, particulars of their circumstances should be given.

2. The Government consider that a further test of the usefulness of divers using the European diving dress should be made, and Captain Phipps should be instructed to give the experiment a full and careful trial. If the services of the Arab diver referred to by Mr. Thorowgood are still available, he should be engaged by the Board on such terms as they consider reasonable.

3. The interesting extract regarding pearl fisheries in Torres Straits, which is given in Board's Proceedings, dated 28th March 1887, No. 619, tends to show that native divers might with advantage be taught to use the European diving dress, and the Board's suggestion that Captain Phipps should train some of his best native hands in this method of diving has the approval of the Government. They do not, however, consider that it is, at least for the present, advisable to purchase one of the Torres Straits boats with fishing gear complete: the Board should, however, endeavour to obtain more complete information regarding the manner in which the pearl fisheries are conducted at Thursday Island.

(True Extract.)

(Signed) J. F. PRICE,  
Ag. Secretary to Government.

To the Commissioners of Land Revenue.  
Copy to the Marine Department.

Reference on the above, dated 30th May 1887.

The Secretary to the Land Revenue Commissioners would be much obliged if Mr. Thorowgood would inform him whether the Arab diver Hadjee Mahomed is still in Madras; and whether he is the man who is referred to by Captain Phipps as having worked with a diving dress in the late Ceylon fishery and failed to achieve good results.

(Signed) M. HAMMICK,  
Acting Secretary.

To F. N. Thorowgood, Esq., Superintendent, Madras Harbour Works.

Read—the following letter from F. N. THOROWGOOD, Esq., Superintendent, Madras Harbour Works, to the Secretary to the Board of Revenue, dated Madras, 31st May 1887, No. 229:—

With regard to your reference, dated 30th May 1887, No. 363, on G.O., Revenue Department, dated 14th May, No. 476, I have the honor to reply that diver Hadjee Mahomed is working at a wreck on the Bombay coast, and he has never worked at the pearl fisheries under Captain Phipps.

2. I am told that there is an Arab diver named Mahomed Beluch who has been working there, and it may possibly be this man who has failed. It certainly is not Hadjee Mahomed.

Resolution—dated 14th July 1887, No. 341.

The Collector will be good enough to report separately on paragraph 1 of G.O., dated 14th May 1887, No. 476, at an early date.

2. With reference to paragraph 2 of the Government Order, it will be seen from the Harbour Works Superintendent's letter, No. 229, dated 31st May 1887, that the only available diver by the European system is in Bombay.

3. Apart from this, however, it would seem useless to insist on Mr. Phipps being made the medium of encouraging native divers to learn the European system while that officer holds the views he does; for it is not possible that he can be encouraging and fertile of resource in overcoming practical difficulties in the matter of appliances, while he himself is convinced that failure is a foregone conclusion sufficiently proven by past trials within his own experience. The Board fear that no progress can be

expected in this direction till appliances such as are found to work successfully in Torres Straits are put complete on the Tuticorin banks and worked to demonstration before the eyes of Mr. Phipps and his divers whom he reports to "have always had an extreme aversion to that mode of diving." It was for this reason that the Board made the proposal which Government have negatived in their concluding paragraph.

4. The Board regret therefore that they cannot at present anticipate any advantage from seeking by advertisement or otherwise to obtain from Bombay or elsewhere the services of a diver following the English system, and they do not see what more they can do in furtherance of the proposal originally made in G.O., dated 31st January 1887, No. 634, than to forward a copy of the papers connected therewith to the Torres Straits with a request that the chief Government officer stationed there will obligingly put himself to the trouble of assisting them with information in detail and drawings to scale, if possible, of the appliances used.

5. The Board observe that Mr. Phipps still adheres to his original objection about "continued stooping," though in personal conversation and in the letter of the Superintendent of Harbour Works, No. 202, dated 23rd May 1887, an officer of Mr. Thorowgood's long experience in diving assures us that—"stooping is the diver's ordinary attitude for excavating stone."

"I am completely at a loss," he says, "to see why properly-equipped helmet divers should not excavate pearl oysters with the greatest ease and at a rate that divers working without the dress ought not to be able to approach."

6. He adds "of course special boats and gear for hauling up the oysters will be necessary," and the Board hazard the conjecture that herein lies the clue to the failures on which Mr. Phipps relies as conclusive against the proposal; for it is readily conceivable that while a weighted helmeted diver could not descend and ascend with the rapidity of a nude diver hampered with no clothing and having only a stone temporarily hitched to his toe to expedite his descent, and could not therefore compete with him if he aimed, like the nude diver, at nothing more than filling at each dive a small hand net containing from half a dozen to 40 or 50 oysters at the very outside. But it is also conceivable and most probable that by continuous unhurried work the helmeted diver ought to be able to fill a set of several large metal crates holding hundreds or thousands of oysters each, and so by continuity of work he ought in the end to show a very much larger aggregate, as well as clear the bottom much more systematically than the hurried native diver possibly can. But for this purpose a well-considered system of crates and derricks and specially adapted boats is of course necessary. It is impossible to tell from Mr. Phipps' report whether these necessary adjuncts were employed in the experiments on which he rests as proofs of failure; and as we have no details as to why Mr. Cocq's and the Ceylon attempts failed, the record of the failures is as yet neither instructive nor conclusive.

7. Still to arrange for all such appliances being so minutely thought out that they may be the best that can well be devised for the purpose is hardly to be expected of one whose beliefs are strongly adverse.

8. The size of the pearl dived for, whether *avicula margaritifera*, or *avicula fucata*, cannot affect the question, and Mr. Phipps probably means to refer only to the diver having to walk about the bottom in search of one, while he comes upon the other in clusters. But however thickly our oysters (*avicula fucata*) may lie continuity of gathering for hours into large crates should produce an immeasurably greater aggregate than spasmodic efforts limited to the minute; and the difference should more than cover the extra cost of appliances, especially at a time when the real difficulty is how to lift the half of the millions of oysters we have now at Tuticorin.

9. While forbearing for the present however to insist on immediate experiments in training the native divers to dive helmeted, the Board do not think that the idea should be definitely abandoned, and pending the reply from the Torres Straits, they desire that Mr. Phipps will give full information as to what was the nature of the oyster-lifting apparatus used at the trials to which he refers. Mr. J. P. James and G. W. Wicks, Port officers, who have taken an interest in pearl fisheries, will also

be good enough to favor the Board with their opinions as to what description of crates, derricks and boats might be best suited to the purpose.

(True Copies and Extract.)

(Signed) M. HAMMICK,  
Acting Secretary.

To the Secretary to Government, Revenue Department.

Copy to the Collector of Tinnevely.

" " Superintendent, Madras Harbour Works.

" " Superintendent, Pearl Banks, Tuticorin.

" to J. P. James, Esq., Port officer, Pamban.

" to G. W. Wicks, Esq., Port officer, Mangalore.

Order—dated 15th August 1887, Mis. No. 4753, Revenue.

Recorded.

(True Extract.)

(Signed) J. F. PRICE,  
Ag. Secretary to Government.

To the Commissioners of Land Revenue.

Read—again the following G.O., dated 27th September 1887, Mis. No. 5767, Revenue:—

Read—the following Proceedings of the Board of Revenue (Land Revenue), dated 16th September 1887, No. 556:—

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

Read—the following letter from G. A. PHIPPS, Esq., Superintendent of Pearl Banks, to the Collector of Tinnevely, dated Tuticorin, 30th June 1887, No. 22:—

With reference to G.O., No. 692, dated 10th August 1886, I have the honor to submit my proposals for conducting the approaching pearl fishery. I may remark that the procedure will be similar to that which was pursued in the former fisheries, only such alterations being made which experience has since dictated.

2. As soon as possible, after the present south-west monsoon is over, I propose to lift from the Tholayiram Par from 15,000 to 20,000 oysters, and, when they are properly decomposed, collect the pearls; these will be valued by a committee of pearl merchants and the valuation obtained reported for the orders of Government. If the holding of a fishery is then decided upon, the usual advertisements will be published and arrangements completed.

3. For the proper carrying out of the fisheries, I would suggest that the Divisional Magistrate should be deputed to be present and associated with myself as Superintendent of the Fishery. All magisterial duties, the police, sanitation, and the will pertain to him, while the general control of contingent and other charges sales, granting of land for private kottos and houses, and receipt of money will form part of my charge. The Divisional officer will also be asked to assist in these matters when the Superintendent has occasion to be absent on the bank.

4. The other officers required specially for the pearl fishery duties will be—  
(1) Inspector.  
(2) Kottoo Manager. | (3) Beach Master.  
| (4) Assistant Master.

5. The Inspector should be a sea-faring man; he will have charge of all duties on the bank and will be provided with a suitable vessel, on board of which he will stay; he will see that the proper lights are hoisted to guide the fishing fleet and make the signals to commence and discontinue diving; under his directions and the Superintendent's the bank will be buoyed off and the part for each day's fishing specially marked; he will keep the boats within such limits, and before permitting them to leave, he will obtain from each approximately the number of oysters fished, which he will send to the Superintendent by the quickest means at his disposal. He will also keep order amongst the boats on the bank and, in communication with the Superintendent, and subject to his orders, carry out such other duties as may be required.

6. The Kottoo Manager should be a European officer. I would suggest that one of the grade of an Inspector in the Salt Department may be deputed for this duty, receiving an extra allowance or batta in consideration of the extra night work. He will have control under the orders of the Superintendent of all matters within the kottoo.

7. The Beach Master may be a sea-faring man, and also his Assistant. Their duties will be to examine and number the boats on arrival; while the fishery is going on, they will search all boats and men landing for concealed pearls, knives, &c.; they will attend to the lighting of the beach and kottoo lamps, and see that the fleet leave at the proper time, and attend to any other works that may be entrusted to them by the Superintendent.

8. The temporary buildings as per list should be all completed by the 15th February next. I would suggest that the work of erecting them be done under your orders. The Deputy Tahsildar might be instructed to prepare an estimate of the probable cost in communication with myself, and a contractor may afterwards be found to undertake the work; the buildings should be placed on the fishery ground, which is two miles north of this town. A small flagstaff will be shown to mark the place.

9. On arrival of the diving boats, they will, after entry in the Custom House, be examined; if found suitable, a number allotted and a small distinguishing flag given them; the first suitable day they will be permitted to proceed to the bank, and, under the orders of the Inspector in charge there, remove oysters; when the loads are sufficiently large, they will be ordered to proceed to the Government Kottoo; on arrival each boat's crew will unload the oysters and bring them to the kottoo to the special plot bearing their boat's number; here the oysters will be divided according to custom and one-third returned to the boat's crew, together with a pass, which will be handed to the gate-keepers, who, after counting the number of loads and seeing that the number corresponds with the pass, permit their egress.

10. When all the boats have discharged and their oysters and crews left the kottoo, the Manager and his establishment will proceed to count the oysters, and, as soon as the number is determined, hand in a statement to the Superintendent, who will hold an auction and dispose of the oysters to the highest bidder; the proceeds having been paid into the treasury, orders will be granted on the kottoo for delivery. This will be done expeditiously so as to have the kottoo cleared quickly; it will be the duty of the Kottoo Manager to keep the Superintendent informed of all matters, taking such orders as may be considered necessary.

11. The system to be pursued at the auction will be sale to be made to the highest bidder, who can be permitted to take at the same rate such a number as the Superintendent may decide after considering the total quantity of the day's fishing, and, secondly, that no oysters be delivered from the kottoo before payment has been made for same. It is unnecessary to allude to other conditions which are often mere matters of form.

12. To the north of the kottoo at a suitable distance plots of ground 24 x 24 feet square will be given to purchasers of oysters for the purpose of washing operations; for the use of the ground no charge will be made. To the west of the kottoo also at a proper distance streets, 50 feet broad, will be laid out; plots of ground, 12 x 24 feet, on each side, will be given free of charge on application for dwelling houses and bazaars.

13. *Sanitary Department.*—This should consist of an Apothecary and a Dresser with a supply of medicines. For their accommodation a small hospital will be provided. A Sanitary Inspector with a staff of peons to keep the place clean will be required; they can also attend to the street lighting, &c.

14. *Police.*—I would suggest that an European Inspector and two Head Constables with a staff of 50 men be detailed during the fishery; guarding of the kottoo, treasury, and the general keeping of order will form part of their duties. The Inspector should be directed to attend to such suggestions and orders as he may receive from the Magistrate and Superintendent of the Fishery.

15. I annex a list of the proposed establishment with the salary. In regard to the establishment, I would suggest that, when possible, competent men from the public offices in the district may be deputed to the Pearl Fishery and their places supplied by acting officers during their absence.

16. *Privileged Boats.*—Previous to the fishery of 1861 some applications were received from the managers of certain temples to be allowed to participate in the fishery; these were in all cases refused. The Jaddithalavanmore, who had devoted much time to the examination of the banks without salary, was the only person allowed to send two boats daily and to take all the oysters brought in those boats. I willingly testify to the continued and unvarying assistance I have received from this person, and as a recompense for all his trouble during the past 25 years, I would suggest that the privilege of two free boats be again conceded to him.

17. *Privileged Oysters.*—This is a perquisite of the Parmandadies; the small number of two oysters for each diving stone used is willingly given by the divers and need not be interfered with.

18. *The Shark Charman.*—A small payment of Rs. 10 may be made to this individual; the family is, I believe, nearly extinct, and possibly there may be no claimant for this amount.

19. *Touring Steamer.*—If the tug steamer *Madras* is not employed upon any important duty and can be spared, I beg that the vessel and crew may be placed at my disposal for such time as I may find use for her, as I anticipate great advantage if she is able to tow the diving boats to the bank on such occasions when the land wind may fail.

20. *Guard Boats.*—The boat *Pearl* and the S.S. *Margaret Northcote* and a gig will be employed in conveying the fleet from the bank to the shore and in closely watching the behaviour of the various crews.

21. *Peons in Diving Boats.*—These were not employed in the fisheries of 1861 and 1862. In Ceylon later experience made it necessary to put a peon in each boat to prevent the clandestine opening of oysters and robbing of pearls. It is doubtful if they proved of much use, or that their presence in the boats prevented any illicit doings which might take place if they were absent. I have included the cost of 50 of these men, but propose to only employ them if found necessary.

22. In regard to divers, as soon as the question of the fishery being held is decided, I propose to send notice to the West Coast, and also to Bombay and Persian Gulf. An Arab, who has been working here for some time, assures me that many divers will come from these places, and I shall utilize this man as a messenger, paying his rail fare and expenses. I am told also that many new hands on this coast will come forward to learn diving as soon as the fair season commences and our chank boats again begin work.

23. Boats for diving purposes will be forthcoming in sufficient numbers; this port alone will supply a large part of the fleet required, and the owners are now engaged in making their arrangements complete for divers.

## ENCLOSURE No. 1.

## MEMORANDUM of Temporary Buildings needed for the Tuticorin Pearl Fishery in 1888.

1. A Government kottoo 500 feet x 400 feet with divisions 24 x 12 for 100 boats matted and covered with a light pandal; the present existing platforms to be repaired and covered also with

a light pandal, and office 25 x 15, also store-room 20 x 15. The kottoo fence should be of cadjan and strong sticks and 9 feet high from the ground level, the outside lightly covered with thorns.

2. Auction-room with cutcherry and treasury combined; this should be 30 feet square and the part for the two latter offices partitioned off.

3. House of three rooms for the Collector or officer in chief magisterial charge with cook-room, &c.

4. House for the Superintendent of Pearl Banks and Fishery similar to.

5. Beach Master's office and Custom House.

6. Hospital and Assistant Apothecary's quarters.

7. Police Inspector and Kottoo Manager and lines for police guard.

8. Fishery ground to be levelled and cleared up.

9. Lines for peons, counters, and coolies. Proper latrines, &c., for both the public and of Government servants.

10. Good water wells.

TUTICORIN,  
30th June 1887.

(Signed) G. A. PHIPPS,  
Superintendent of Pearl Banks.

## ENCLOSURE No. 2.

SCALE of Monthly Allowances proposed for the Establishment required during the Pearl Fishery at Tuticorin in 1888.

| Particulars.                                          | Amount. | Total. |
|-------------------------------------------------------|---------|--------|
| <i>Superintendent's Establishment.</i>                |         |        |
| Chief Clerk per month                                 | Rs. 50  |        |
| Second Clerk do.                                      | 30      |        |
| Treasurer do.                                         | 25      |        |
| Shroff do.                                            | 15      |        |
| 1 Head Peon do.                                       | 10      |        |
| 6 Peons at Rs. 7 each per month                       | 42      |        |
| 1 Tom-tom-beater at Rs. 5 per month                   | 5       |        |
|                                                       |         | 177    |
| <i>Kottoo Establishment.</i>                          |         |        |
| Manager at Rs. 10 per day                             | 300     |        |
| 2 Clerks at Rs. 20 each per month                     | 40      |        |
| 2 Do at „ 12 do.                                      | 24      |        |
| 2 Head Peons as gate-keepers at Rs. 10 each per month | 20      |        |
| 20 Counters at Rs. 15 each per month                  | 300     |        |
| 10 Peons at Rs. 7 each per month                      | 70      |        |
| 30 Coolies at 8 annas each per day                    | 450     |        |
|                                                       |         | 1,204  |
| <i>Custom House Establishment.</i>                    |         |        |
| Head Clerk per month                                  | 25      |        |
| Second Clerk do.                                      | 10      |        |
| 2 Peons at Rs. 7 each per month                       | 14      |        |
|                                                       |         | 49     |
| <i>Beach Master's Establishment.</i>                  |         |        |
| Beach Master per month                                | 100     |        |
| Assistant Master do.                                  | 50      |        |
| Clerk per month                                       | 15      |        |
| 4 Peons at Rs. 7 each per month                       | 28      |        |
| 4 Coolies at 8 annas each per day                     | 60      |        |
|                                                       |         | 253    |
| <i>Medical.</i>                                       |         |        |
| Medical Subordinate per month                         | 100     |        |
| Dresser per month                                     | 30      |        |
| 2 Peons at Rs. 7 each per month                       | 14      |        |
|                                                       |         | 144    |
| <i>Sanitary Establishment.</i>                        |         |        |
| Nuisance Inspector per month                          | 35      |        |
| 6 Peons at Rs. 7 each do.                             | 42      |        |
| 15 Scavengers at Rs. 5 each per month                 | 75      |        |
|                                                       |         | 152    |

| Particulars.                                           | Amount. | Total. |
|--------------------------------------------------------|---------|--------|
| Hire of two boats at Rs. 3 each per day ...            | Rs. 180 | Rs.    |
| 6 Lascars to attend boats at 12 annas each per day ... | 135     |        |
| <i>Guard Boats.</i>                                    |         | 315    |
| Inspector of Pearl Banks per month ...                 | 300     |        |
| Boat Pearl establishment during the Fishery ...        | 80      |        |
| Do. Gig do. do. do. ...                                | 65      |        |
| 6 Divers at 1 rupee per day ...                        | 180     |        |
| Guard Vessel at Rs. 500 per month ...                  | 500     |        |
| 50 Peons for diving boats at Rs. 7 each per month ...  | 350     |        |
| Printing and Contingencies ...                         | 1,475   |        |
|                                                        | 1,000   |        |
| <i>Police Establishment.</i>                           |         | 1,000  |
| European Inspector ...                                 |         |        |
| 2 Head Constables at Rs. 20 each per month ...         | 40      |        |
| 50 Constables at Rs. 7 each per month ...              | 350     |        |
|                                                        |         | 390    |
| Total ...                                              |         | 5,159  |

Endorsement by J. LEE-WARNER, Esq., Collector of Tinnevely, dated 8th July 1887, No. 407.

Submitted to the Commissioners of Land Revenue with reference to paragraph 1 of Board's Proceedings, No. 2357, dated 27th October 1886.

2. With reference to paragraph 3, it will be arranged by the Collector and District Magistrate at the time who is to be associated with the Superintendent. The fishery will commence just about the time when Divisional officers are most busy with jama-bandi. Probably the Collector will be able to relieve the Sub-Collector during part of the time and *vice versa*.

3. With reference to paragraph 8, I believe that on a former occasion the temporary buildings were set up by the Public Works Department and cost a large figure. I should propose to relieve one of the Deputy Tahsildars of his regular duties and give him entire superintendence over the preparation of the pearl fishery arrangements on land. This could be easily managed.

4. A great deal of the success of the fishery must depend on the personal exertions and tact of the four officers referred to in paragraph 4. I request that I may be informed a convenient time before hand whether I am to nominate for such offices, or the officers will be sent down from Madras.

Read—the following letter from J. P. JAMES, Esq., Port Officer, Pamban, to the Secretary to the Commissioners of Land Revenue, dated Pamban, 1st August 1887, No. 198:—

I have the honor to acknowledge copy of the Board's Proceedings, No. 341, dated 14th July, and in accordance with the request that I should give my opinion as to the description of derrick, boats, &c., suited for pearl fisheries, beg to state firstly, that although I have taken a great interest in the work, I have had no actual practical experience in it.

It is therefore with great diffidence that I venture to express a diametrically opposite opinion to that of an officer of such lengthened experience in the work as Captain Phipps.

I am decidedly of opinion that there should not be any difficulty in raising the pearl oysters by means of the helmet divers, provided always that they are properly equipped and the pumps managed by experienced tenders.

I entirely agree with Mr. Thorowgood that "the helmet divers have not had a fair chance." My reasons for this are, firstly, the natives of this coast are most blindly

prejudiced against any innovation on their ancient customs. Their forefathers were accustomed to using the stone, and it is good enough for them they say; and with men of this fixed idea, it is therefore nearly impossible to get them even to take an interest in any new way of working.

It is simply the old struggle of hand labor *versus* machinery, which was so bitter in England half a century back.

With the blacks of the South Seas on the other hand, the pearl fishery is a comparatively new industry, and they were quick enough to take to the best mode of raising the shells, having no ancient prejudice to struggle against.

As the pearling on the north-east coast of Queensland, as well as on the coast of West Australia is entirely under the management of intelligent Europeans, it is quite reasonable to suppose that if the diving dress did not suit best, it would be discarded at once.

Again, the very crude attempts that have been made, in the one case with what Captain Phipps styles "a very wretched affair," and in the other by a comparatively unexperienced diver, which unfortunately ended fatally to him, are not calculated to inspire confidence in the minds of people so prejudiced as are the natives of Southern India.

Commencing, therefore, with the opinion that the diving dress should by all means be introduced.

I should recommend that, if possible, working models of the boats working in Torres Straits and from the Swan river be procured. The pearling industry has been carried on from the latter much longer than from the former, and I should therefore imagine that the Swan river boats would be better equipped, having had more experience of the gear best suited for effectual carrying on of the work.

The boats would be probably complete with derrick, winch, and creels.

If Government imported a steady European diver, say, for six months, I think that he could teach some of the Madras catamaran men, who having mixed more with Europeans, and having seen so much European machinery, would not be so prejudiced, and would be willing to learn; these men then in turn might be sent to Tuticorin to teach the Manaar divers, who would more readily learn from men of their own race and speech, than from Europeans.

Having then the divers, boats could very soon be built on the models procured from Australia, and a complete pearling staff would be at hand, who could also be employed in working the chank beds not only of Tinnevely, but also of Madura and Tanjore, which are either now let out on lease, or are pirated by the islanders in Palk Straits. Failing this, I would have barges of about 30 tons, fitted with a swinging derrick and winch, and the baskets or creels would be made of galvanized iron wire of about  $\frac{3}{8}$ " thickness so as to be strong and not too weighty, the bottom to be protected by a 2-inch rope grummet.

The winch might easily be worked by two coolies who could heave up the creels as fast as they could be filled.

To render them independent of steam or wind, a stern paddle wheel (worked by a crank and four or six coolies) might be fixed on, similar to what was formerly in use on the Godavari. These projects of course presuppose the services of helmet divers.

If helmet divers are not at work, I do not think the present system can be improved on; it is a system that has been in vogue for, one might say, centuries; it suits the natives, and as time is never any object to them, it fits in with their ideas admirably.

I fear I have rather gone beyond what I was requested, and must apologise to the Board for taking up valuable time; but I thought it necessary, before giving any opinions, to explain my reasons for forming them.

I lived some time in the north of Queensland and was in contact with pearlers who came to Cook Town sometimes.

The West Australian barquentine *Janet*, Captain Campbell, may probably be expected here in the next few weeks, and as the master is an old experienced pearler, I might get some valuable information from him, and, if the Board think fit, submit to them for their consideration.

In conclusion, I respectfully request that I may be supplied with a copy of the Board's Proceedings, No. 619, dated 28th March 1887, if one is available, if not, with the extract from Romilly's report.

Read—the following letter from G. W. WICKS, Esq., Port Officer, Mangalore, to the Secretary to the Commissioners of Land Revenue, dated Mangalore, 9th August 1887, No. 229 :—

With reference to the Board's Proceedings, dated 14th July 1887, No. 341, I have the honor to submit my opinions regarding divers using the European diving apparatus for pearl-fishery work, and the description of boats and appliances best suited for them.

2. Having been in charge of the Tinnevely pearl banks and also having been present at a fishery in Ceylon, I have some experience of what would be required of the divers, although I myself have never tried them with the European dress, but I should certainly think that, with proper appliances, boats, &c., helmeted divers should be able to do much better work than ordinary nude divers can possibly do, especially when the banks such as "Tholayiram Par" are so thickly covered with oysters as to do away with the only difficulty that occurs to me, that of constantly moving the boats about.

3. I, however, think that the Tuticorin divers will not be brought to see the benefit of using the dress, until they have it demonstrated to them by experienced Native divers from other places as they are very conservative in their ideas. I would recommend, therefore, that divers such as Hadjee Mahomed (who is known to me as a good diver) should be employed for this system; no difficulty will be experienced in securing the services of such men from the large dockyards in Bombay. They are, as a rule, very poorly equipped, and as the diving on the pearl banks is deep, it would be necessary for the divers to be provided with the best description of diving dresses, pumps, &c., and I am strongly of opinion that, if they were thoroughly equipped, the result would be satisfactory. If left to themselves they will not provide anything wrecks in shallow water.

4. I have given the matter of boats, derricks, crates, &c., my best consideration. There are in Tuticorin several cargo boats or dhonies of about 20 tons' measurement which could, in my opinion, be very well adapted for the purpose. Each diver employed would require one of these boats for himself and his gear, and as hiring from the owners would be expensive, I would suggest that the number of boats required should be bought. I think there would be no difficulty in disposing of them after the fishery is over. These boats are handy, being fitted with one mast, with sufficient space in the hold or well for the diver's pump and gear as well as for swinging by means of goose-necks over each side of the boat, as shown in the accompanying sketch. The derricks in their turn to be fitted with the necessary spans, ropeguys, small iron gins, and ropefalls, the latter sufficiently long to reach to the bottom of the oyster beds, or say about 18 fathoms in all. Below, in the well of the boat and before the mast and the heels of the derricks should be placed a small light crab winch with ends for winding up the derricks' falls on both sides. This could be worked by four men, one at each handle of the winch and one for each fall.

5. I am not in favor of any description of iron crates as receptacles for the oysters, but prefer the idea of a net something on the principle of the drag-net used for oyster-dredging in England. This net resembles in shape a common clasp purse and could be made of any size required, but I should think that a net 4 feet long and 3 feet wide opening to 2 feet at the mouth would be sufficiently large. It should be made of strong small coir rope with meshes not exceeding 2 inches in size (the oysters being about 3 inches across) attached to a strong iron frame working on a

joint or hinge in the middle and fitted with chains at each corner which should be attached to a cross bar giving sufficient head room for the filling up the bags handily. To this bar are also attached the fall or rope from the derrick by a shackle and two short chains for the purpose of being passed over the projected pin, thus keeping the mouth open for filling as shown in enlarged details. When the bag is ready to be sent up the diver has merely to slip the rings off the pins and signal, the mouth then closes with its own weight and the strain on the fall. Allowance must be made for much rolling of the boats, when meeting with swell on the banks; for this reason I think that the net with the iron framework sufficiently heavy to sink itself is more suitable than any rigid iron crate which would be liable to break in striking the boat's side. The derricks swinging over each side of the boat would keep two of these nets working; one going down as the other comes up, so that there would be no delay for the diver. Another suggestion I should like to make is, one to expedite and facilitate the emptying of the nets when hauled up, namely, that the bottom or pouch part of the net should have a stout slip-rope run the last meshes so as to allow of them being opened at the bottom. This would do away with the necessity of unshipping them each time from the falls, so that when swinging in-board, by just merely slipping a knot, the contents would fall into the hold of the boat or into bags placed under the nets to receive the oysters.

6. In case that my explanations are not sufficiently explicit, I beg to enclose some small drawings \* giving an illustration of my ideas.

\* Forwarded separately per packet post.

7. As the Board have been pleased in their Proceedings, dated 24th February 1886, No. 481, to recommend that Captain Phipps should have my temporary assistance on the occasion of the next fishery, and the Government in their Order, dated the 12th May 1886, Mis. No. 2834, Revenue, having approved, I shall, in the event of my services being applied for, be very glad to do all I can to help in furthering the Board's wishes in this matter.

8. In conclusion, I wish to take this opportunity of stating, for the information of the Board, that amongst the more recent applications of the electric light can be reckoned its use in pearl-fishery work. Hitherto it has only been found possible to give a light to a depth of 7 to 8 fathoms. I learnt, however, when I was on leave to England a short time ago that Messrs. Alley and MacLellan, Engineers of the Sentinel Works, Glasgow, were fitting out the steam yacht *Chic* with a brush dynamo and electric globe for the purpose of suiting her for the pearl-fishing in South Australian waters, and in this case, owing to the improvements effected, it was expected that the light would be given to a depth of 17 fathoms or about 5 fathoms more than the extreme depths of the Tinnevely pearl banks. A similar light or even one of less power fitted on board of the *Margaret Northcote* might, I think, prove very useful for the pearl-fishery work in India, more especially as a search light for examining the banks. I availed myself of the opportunity of being in Glasgow to call on Messrs. Alley and MacLellan, with the object of seeing the apparatus and light at work on board of the *Chic*, but unfortunately the arrangements were not then completed owing to some delay on the part of the people making the electric globe, and I had no further opportunity of revisiting Glasgow.

Read—the following letter from G. A. PHIPPS, Esq., Superintendent of Pearl Banks, to the Collector of Tinnevely, dated Tuticorin, 8th August 1887, No. 27 :—

With reference to paragraph 6 of the Board's Proceedings, No. 341, dated 14th ultimo, I have the honor to report that the most convenient method of lifting pearl oysters from the sea is found to be in large or small open end nets. These are made of the shape as given in the margin and will hold 100 to 500 oysters according to size; when diving the Native diver takes one down in his hand, the line of which is held by some one in the boat; after filling

Drawing separately enclosed.

it as much as he can, a small jerk in this line is a signal to pull it up, which is done while he himself rises to the surface. In the case of a diver using a helmet, a small line is also attached to the underneath part of the net, the end of which is made fast to the lower part of the ladder or to the diver's arm; this enables him to pull the net to him after it has been emptied to wherever he may be, as it is not convenient for the diver to come to the surface each time after he has filled the net.

2. These nets are made of the stalk of the palmyrah leaf and coir yarn and are strong and serviceable, easily constructed and inexpensive. The weight is slight and even when full of oysters they can be lifted into the boat without difficulty. The boats used are the small dhoney from 30 to 40 feet long, which is, I think, suitable in every way, being roomy and easy to move about. I do not know that anything better than these simple appliances could be got to answer the purpose for which they are required, and do not think that any other kind of crate made of iron or heavy material which would require a derrick to lift could be nearly so handy.

3. In regard to the use of the helmet dive in getting chanks, in the experiment made by Mr. Cocq the diver stated that he had to move about and then kneel before he could get hold of each separate shell as they do not lie close together; this was found to be inconvenient and, as the diver himself allowed, not at all likely to end in a profit to his employers or to obtain a bonus for himself which he was promised it was abandoned, Mr. Cocq having sunk about £200.

4. I beg to state that as Government in their Order of 14th May, No. 476, Revenue, wish another trial to be made of diving with the helmet, I shall be most willing to carry it out; the difficulty is to obtain a really competent European; if by advertising an engagement of one should be practicable, I will make the necessary arrangements. I think it would be better for any diver coming here to bring his own apparatus complete and also a tried assistant of his own selection.

Endorsement by J. LEE-WARNER, Esq., Collector of Tinnevely, dated 10th August 1887, No. 498.

Forwarded.

Read—the following letter from G. W. WICKS, Esq., Port Officer, Mangalore, to the Secretary to the Commissioners of Land Revenue, dated Mangalore, 3rd September 1887, No. 253 :—

In continuation of my letter to the Board, dated 9th August 1887, regarding apparatus for pearl-fishery work, I have the honor to submit herewith a plan of an improved oyster receptacle in lieu of the one illustrated in my former drawing, a description of which was also given in paragraph 5 of the abovementioned letter.

2. The crate or receptacle illustrated in the accompanying plan consists of a net-purse or sack made of rope having an automatic framework for opening and holding in a handy position for filling when resting on the bottom.

3. It has an angle iron framing A hinged at B somewhat after the manner of a common clasp purse. From the hinge pin B, by pairs of short links CC are suspended the folding legs EE (Figs. 1 and 2) upon which the whole rests when on the bottom (Fig. 3), the short links being gauged to admit of the legs opening only to the required width for the reception in their crutched ends of the pins HH; this is arrived at by having a stop joint at B. The crate is hung upon a cross bar F by pairs of links GG, the down rope or fall being fastened to its centre as shown in Fig. 1.

4. The whole opens out by its own weight as soon as the long limb of the stand-framing reaches the bottom, and falls into position ready for filling (Fig. 3). The lie quite level, but it is so little off the level that it is of no consequence, neither does this interfere with the stability of the whole when at rest.

5. Though apparently complicated, the arrangement is exceedingly simple, easily made, and not liable to get out of order. Neither does the ironwork interfere with the free loading and discharging of the sack. The latter operation is performed in the manner described in my former letter, namely, by a slip-rope at the bottom of the net.

6. The total weight of the ironwork in a crate of the dimensions detailed in accompanying plan will not exceed  $1\frac{1}{2}$  cwts.

Read—the following letter from G. A. PHIPPS, Esq., Superintendent of Pearl Banks, to the Collector of Tinnevely, dated Tuticorin, 5th August 1887, No. 26 :—

As directed in paragraph 10 of the Proceedings of the Board of Revenue (Land Revenue), dated 14th July 1887, No. 340, I have the honor to forward herewith a general notice in English and Tamil regarding the proposed pearl fishery to be held here early next year, and shall be obliged by your placing the same before the Board for publication. I would suggest that the advertisement be translated and published also in Telugu, Hindustani, Malayalam and Arabic; the latter to be forwarded to the Resident in the Persian Gulf for distribution.

2. Intimation has already been sent by circular letter several months past to all places around this coast and of Madura and Tanjore warning the trading community that this large pearl fishery was expected.

Endorsement by J. LEE-WARNER, Esq., Collector of Tinnevely, dated 11th July 1887, No. 497.

Forwarded to the Board of Revenue.

2. It is suggested that a copy of the notification may be sent to all Collectors, inland as well as maritime, for wide publication, as it is of as much importance to get merchants as divers. I have also slightly amended the notifications. My amendments appear in red ink.

Read—G.O., dated 15th August 1887, Mis. No. 4752, Revenue.

ABSTRACT.—Recording, with remark, Board's Proceedings submitting letter from the Collector of Tinnevely forwarding the report of the Superintendent of Pearl Banks on the examination of the pearl banks on the coasts of Tinnevely and Madura.

Read—again Proceedings of the Board of Revenue (Land Revenue), dated 14th July 1887, No. 340.

ABSTRACT.—Submitting, for orders of Government, with remarks, letter from the Collector of Tinnevely forwarding the report of the Superintendent of Pearl Banks on the examination of the pearl banks on the coasts of Tinnevely and Madura.

Read—again Proceedings of the Board of Revenue (Land Revenue), dated 14th July 1887, No. 341.

ABSTRACT.—Submitting to Government remarks on subject of use of English diving apparatus on the Tinnevely coast and introduction of improved appliances in use at pearl fisheries in Torres Straits; and requesting Collector to furnish information called for by Government regarding family, if any, left by deceased European diver Mr. Dennison.

Read—again Proceedings of the Board of Revenue (Land Revenue), dated 20th May 1887, No. 121.

ABSTRACT.—Submitting, for the information of Government, report of the Superintendent, Pearl Banks, Tuticorin, on the pearl fishery at Arippe in Ceylon.

Resolution—dated 16th September 1887, No. 556.

The papers recorded above will be submitted for the orders of Government, with the following remarks.

2. The pearl fishery at Tuticorin has hitherto been conducted with the aid of native divers alone, a helmeted diver being used only for fixing the position of the buoys.\* In view of the supply of native divers being considered inadequate to the fishing of the whole oyster bank, the

\* Paragraph 10 of Collector's letter enclosed in G.O., No. 132, dated 18th January 1861.

Government in G.O., dated 10th August 1886, No. 692, suggested the use of twenty-five helmeted divers. Mr. Phipps, Superintendent of Pearl Fisheries, strongly deprecated this course as being within his knowledge a completely proven failure. The Government proposal is however accepted, as thoroughly feasible, by Mr. Thorowgood, who as Superintendent of the Madras Harbour Works has had much experience with helmeted divers, and the proposal obtains further support from Australia and from the opinions of Messrs. James and Wicks, Port Officers, who have taken active interest in pearl fisheries.

3. Whatever may be the respective advantages of the two systems which will be discussed below, there is no doubt that there is ample room in the expected fishery for their both being tried simultaneously; indeed, it was because of the extent of the area to be fished that it was originally proposed by Government that the helmeted system should be tried as supplementary to the native diving. It may also be taken as beyond discussion that it would not be fair either to the helmet diving system, or to Mr. Phipps himself, that the helmet diving experiment should stand its trial at the hands of one so strongly prepossessed against it. However fair a trial he may desire to give it, it is not in human nature that he can be as fertile of resource in overcoming practical difficulties as one who works with a conviction that all such difficulties are mere matters of detail that must yield to energy. Furthermore, even if it were possible that Mr. Phipps, or any one in his position, could give the experiment the same whole hearted assistance as those who are strongly impressed with its feasibility, there is no doubt that the more than ordinary number of native divers expected will so enlarge his duties that they alone will fully tax his best energies. This consideration alone is of itself sufficient to place it beyond a question that it would not be possible to expect of Mr. Phipps the conduct of the helmeted diving in addition to the native diving. The then Collector records that on the occasion of the last fishery in 1861-62 there were 20,000 people present. It is not improbable that the numbers on this occasion will nearly double that figure. The ordering of such a vast concourse and the daily directing of sales, which may possibly be more than twice as large as in 1862, and extend over 50 instead of 21 days, is more than enough to fully tax all his energies. He certainly will have no time to turn aside to experimenting. He can only hope to cope with his duties by proceeding systematically in accustomed grooves.

4. The Board propose therefore to discuss the two modes of diving separately, premising that, while they will suggest below that the helmeted diving be detailed to another, the general superintendence of the whole fishery should still remain with Mr. Phipps, the helmet diving proceeding simultaneously with the native diving, under the same general rules of time and place, the takes by the one system being, like the takes by the other, daily delivered for disposal in the same way.

5. Turning first then to Mr. Phipps' proposals † which are for the conduct of a pearl fishery at Tuticorin in March 1888 by native divers, the Board suggest generally that they may be accepted subject to the following considerations.

† No. 22, dated 30th June 1887.

6. In lieu of the very great labor and loss of time entailed by counting the oysters, which run to millions a day (Mr. Phipps' paragraph 10), the Board would suggest approximate gauging by measurement in a bottomless topless box placed on the ground filled, struck and lifted leaving the oysters in a heap as metal is measured by the road-side. It will be easy to ascertain what depth and width of such wooden frame will most conveniently hold 1,000 oysters struck, and advantage may be taken of the proposed lifting of sample oysters in February to ascertain it. That done a number of such frames should be prepared for the March fishing.

7. In anticipation of Government sanction, the Board, looking to the importance of not losing time, sanction the course proposed to be taken by Mr. Phipps in his 22nd paragraph, which they trust will have the approval of Government.

8. In his final paragraph, Mr. Phipps speaks confidently of the boats being sufficient in numbers, and no mention is made of any anxiety on account of Ceylon competition; but as to what the numbers are likely to be no indication is given, except that in the accompanying memorandum of temporary buildings, it may be traced that provision is made for 100 boats, in addition seemingly to existing pandals to be repaired. What this may amount to on the whole is not clear. It is to be regretted as the number of boats is perhaps the most important point on which the success of the fishery mainly turns. Mr. Phipps should report further on this point later on, and in the mean while it should be understood, the Board submit, that any supplementary provision that may be needed in this direction should be made, rather than that the fishery be curtailed for want of it. These pandals, it may be explained, are not for sheltering boats, but that each boat may have a place allotted to it for depositing its daily take till sale. If these places are unequal to the number of boats, confusion and insecurity of oysters must arise from the surplus takes being deposited in the open. It is observed in this connection that more boats arrived in 1862 \* than were expected. Looking at the exceptional measures being taken for securing a full supply of boats, it may be expected that the same will occur at this fishery. Provision, especially as it is inexpensive, should therefore be ample.

\* Paragraph 5 of the letter of the Collector of Tinnevely in Board's Proceedings, No. 4390, dated 8th July 1862.

9. The Board note also that no provision at all is made for depositing space for the oysters taken by the helmeted divers. Extra accommodation will be needed for this purpose also. Mr. Phipps should provide it.

10. The platform for the storage on Government behalf of oysters not bought by reason of combination of pearl merchants, suggested at the close of paragraph 6 of Mr. Phipps' letter, No. 1, dated 10th January 1887, and approved in paragraph 4 of Board's Proceedings, No. 619, dated 28th March 1887, has been overlooked seemingly. It is not among the buildings proposed in the memorandum accompanying Mr. Phipps' letter, No. 22, dated 30th June 1887. It is an essential not to be omitted.

11. The Board observe that in the fishery of 1861-62, Mr. Phipps was by special request assisted by Captain Pascal, the Master Attendant at Negapatam, much more is he likely to need efficient aid on this occasion, when the fishery is expected to be both much larger and to last, weather permitting, for 50 instead of 21 days. The Board suggest therefore that the Beach Master, who is estimated for by Mr. Phipps at Rs. 100 a month, should be a Port Officer, with an appropriate additional salary while on this temporary service. They suggest Mr. J. P. James, Port Officer of Pamban, not only because he is near, but also because both at Pamban and in Australia he has taken an interest in pearl fisheries as his enclosed letter will show, and should Mr. Phipps find himself overdone at any time during the long and arduous duty, as he well may, for it is arduous beyond description and accompanied with very trying exposure, Mr. James would be able to come to his temporary rescue in the general conduct of the fishery.

12. With this one exception they would leave the nomination of the other officers to the Collector as suggested in the closing paragraph of his endorsement, † all the other proposals in which they would also accept.

† No. 407, dated 8th July 1887.

13. The Board also support the recommendations for translating, publishing and transmitting to the British Resident in the Persian Gulf the notice of the fishery as amended by the Collector.

14. Turning now to the helmeted diving, the Board are indebted to Mr. J. P. James and Mr. G. Wicks, Port Officers of Pamban and Mangalore, for interesting communications on the subject, in which they are in accord with Mr. Thorowgood that helmet diving, as proposed by Government, is feasible and should be advantageous. Their letters are enclosed.

Dated 9th August 1887, No. 229.  
" 3rd Sept. " " 253.  
" 1st August " " 198.

15. Mr. Phipps' explanation of the circumstances in which helmet diving proved in his experience a failure is also submitted. It appears that the hitch was where the Board surmised in their Proceedings, dated 14th July 1887, No. 341, the receptacle for the helmeted diver's takes was inadequate and so his time was wasted.

16. As his letters show, Mr. Wicks has thought out the matter in much painstaking detail, and the Board think he should be put in charge of this experimental part of the diving operations. They would leave to him the making up of the implements he proposes to use and the whole arrangement of his own outfit and staff. They would subordinate him to Mr. Phipps as Superintendent of the Fishery only so far that he should conform to the general rules as to when and where to fish and when and where to make over the takes to Mr. Phipps just as the native divers do, but in all subsidiary matters would charge him with the sole responsibility of endeavouring to make a success of the system which he supports.

17. In this there is doubtless enough to fully occupy all the energies and close attention of one officer, and if Mr. James, who advocates the same system, is also on the scene in the capacity of Beach Master, the hopes of success should be materially strengthened.

18. English divers are apt, like all divers, to use the alcoholic stimulants which their profession causes a natural call for, and at such times Englishmen are not quite so easily controlled as natives are. Mr. Wicks would have this responsibility also.

19. In view of the possibility that the Madras Harbour Trust might be able to lend us divers complete, the Board, wishing to leave no opportunity untried, applied for such services, but learn that March is a busy season here and they cannot be spared.

20. The Board would therefore propose to leave it to Mr. Wicks to make his own arrangements in Bombay, which is easily visitable from Mangalore, for the employment of 25 helmeted divers, the number suggested in G.O., dated 10th August 1886, No. 692, or any less number. He could arrange all details satisfactorily by visiting Bombay in person, and on ascertaining the cost might seek the sanction of Government direct by telegraph before completing his contracts and leaving Bombay. While there he would have facilities, not obtainable at Mangalore, for making up a full working sample of the sack and bag pouch he recommends, and after testing it could leave it behind for the required duplicates to be made up and sent subsequently. This will be more satisfactory than trusting to drawings in which some essential to working order is often found to have been forgotten but easily remediable by the inventor.

21. In conclusion the Board would draw attention to the stress laid on the necessity for the services of the steamer *Madras* as a tug—Board's Proceedings, dated 14th July 1887, No. 340, paragraph 5.

(True Copies and Extract.)

(Signed) M. HAMMICK,  
Acting Secretary.

To the Secretary to Government, Revenue Department,  
with one enclosure in G.R. Nos. 1726 and 1723 and two  
enclosures in G.R. No. 1937 of 1887, to be returned, and a drawing.

Copy to the Collector of Tinnevely.  
" " Superintendent, Pearl Banks, Tuticorin.  
" " Port Officer, Pamban.  
" " " Mangalore.  
" " " Madras.

Order—dated 27th September 1887, No. 5767, Revenue.

Referred to the Marine Department for favour of very early remarks on the proposed deputation of Messrs. James and Wicks and the employment of steam tug *Madras*.

READ—also the following Proceedings of the Board of Revenue (Land Revenue), dated 6th October 1887, No. 606:—

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

Resolution—dated 6th October 1887, No. 606.

In their Order, dated 14th May 1887, No. 476, Revenue, the Government negatived the Board's proposal made in their Proceedings, dated 28th March 1887, No. 619, paragraph 8, that a sample boat should be obtained from Australia fitted with all the requirements which actual experience had there shown to be best suited to the profitable use of helmeted divers in pearl fishing. The Board therefore, after repeating in Board's Proceedings, dated 14th July 1887, No. 341, paragraph 3, their regret thereat, reluctantly endeavoured to meet the difficulty by inviting the assistance of other port officers, and obtaining it forwarded the same to Government for acceptance in their Proceedings, No. 556, dated 16th September 1887.

2. But on further consideration, the Board venture once again to submit their original proposal to Government on the following grounds.

3. The lifting gear suggested by Mr. Wicks is at best admittedly an experiment. Such experimental machinery is always liable to fail on account of some minor detail which is only discoverable under the strain of actual work. Should any such objection arise, the means of removing the defect may well be wanting on the spot at Tuticorin. The check in the middle of operations while all the helmeted divers' pay with that of their staff, was running, would in any case be expensive. The interests which Government have at stake are too large to be subjected to such risks.

4. In view of all these considerations, the Board are of opinion that it will be much more economical in the end if the Government will depute either Mr. James or Mr. Wicks to proceed to Australia and there purchase two or more completely fitted-out boats of the description there most approved for helmeted diving for pearls. Looking to the magnitude of the interests involved, the Board would suggest that the number of boats should be sufficient to carry the 25 divers originally contemplated by Government—G.O., dated 10th August 1886, No. 692.

5. If early orders are passed, there will be time enough for the selected officer to bring the boats to Tuticorin well in advance of the fishery in March. We shall then have boats and gear which we know have been subjected to the test of actual use and are the practical outcome of the interested energies and experience of intelligent Australian and English pearl fishers.

6. To the officer charged with this mission should also be entrusted the subsidiary question of how best to work the boats. It will be his duty to ascertain how many divers are employed in each boat, and whether they can be obtained in Bombay, or whether for any reason they should be engaged, if indeed it be possible, in Australia; and he should arrange that they come with diving dress and other appliances complete, or failing that, he should ascertain all necessary details of what is the most approved dress, &c., by what maker, so that it may be ordered out from England by telegraph unless it be held ready in stock in Australia, and can be purchased and brought over with the boats without delay.

7. Looking at the advanced state of the fishery, and the impossibility of looking with any certainty to a reply in time to the Board's reference to the Torres Straits made in Board's Proceedings, dated 14th July 1887, No. 342, in pursuance of G.O., dated 14th May 1887, No. 476, the Board submit that decisive action should be taken in the manner proposed without further delay.

8. Since the submission of Board's Proceedings, dated 14th July 1887, No. 341, the advisability of employing helmeted divers has been resubmitted in Board's Proceedings, dated 16th September 1887, No. 556, and the necessity would seem to be still

further accentuated by the competition of Ceylon, to the possibility of which reference has been made in several Board's Proceedings \* and which from a communication received from Mr. James, Port Officer of Pámban, would seem to be now a reality—

\* 14th July 1887, No. 340, paragraph 9.  
10th September 1887, No. 556, paragraph 8.

"Nearly all the divers on the coast are bondsmen of certain well-to-do families. The system is this; the rich man makes an advance of a sum of money to a diver, who in turn signs an agreement for himself and heirs, i.e., sons and grandsons, to work only for the family of the lender. Of course, such a bond is perfectly illegal, but the ignorant natives don't know that. If steps are not taken to let them know that they are in no way bound, it may be bad for us; one man called Joaquim or Sowkium, who commands one of the Ceylon Emigration vessels, has about thirty of the Kilakarai and Pámban divers so bound to him, and he intends to take them all to Ceylon; there are others too who live at Kilakarai employed in the emigration vessels who have men bound, and will take them away. It would be well to let the people know that they need not hold themselves by these bonds, and that sons and grandsons are free agents and not responsible for their fathers' acts. If boats are wanted I can send at least fifty from this port of about 5 to 30 tons.

I have just interviewed one of the bondholders, and he says he has from 100 to 150 men bound to him, and he is going to take them to Chilan; he lives at Kilakarai, and he says that 300 divers from that place alone are under bond for Chilan. We can stop boats from going there. Under the Act of 1867, "no boat allowed to leave the port without permission," but how about the men?

9. The Collector of Tinnevely will be good enough to give his early and best attention to this subject of the supply of native divers and boats.

10. Since these Proceedings were penned, the Board learn that a crate is on its way from Mr. James, which he considers superior to that suggested by Mr. Wicks in Board's Proceedings, dated 16th September 1887, No. 556. The Board feel that it is not practicable for any one positively to predict with safety which of several devices will be the most advantageous without putting them to the practical test of actual use in the sea and subject to all the difficulties of depth and current, &c., under which they will be required to do service on the pearl banks, and they are of opinion that the proposal serves to emphasise the Board's judgment that the only safe way is to purchase what has been proved by actual experience in Australia to have borne the test of practical every-day use for the special purpose.

(A true Extract.)

(Signed) M. HAMMICK,  
Acting Secretary.

To the Secretary to Government, Revenue Department.

Copy to the Collector of Tinnevely.

" to the Superintendent, Pearl Banks, Tuticorin.

" to J. P. James, Esq., Port Officer, Pámban.

" to G. W. Wicks, Esq., Port Officer, Mangalore.

READ—the following demi-official from F. N. THOROWGOOD, Esq., Superintendent, Madras Harbour Works, to the Secretary to Government, Revenue Department, dated Madras, 11th November 1887, No. 986:—

In reply to your letter of the 8th, there is not much choice as to the makers of diving apparatus, all being about equally good. Messrs. Heinke and Co., Messrs. Heinke and Davis, Siebe and Gorman and Denayrouze and Co. are the great names. On these works I have always used Siebe and Gorman's gear, but on the works of the River Tyne Commissioners, where I formerly was, we always used Heinke and Co.'s apparatus.

2. A complete set of apparatus for one diver costs about £98 in London. A double pump for two divers at a time from one boat costs £162 s.10 delivered here.

3. The boat should be a good stiff cargo boat fitted with a floor or bottom. Cost of fitting say about Rs. 250 to Rs. 400. It is best to have two divers from one boat and use the double pumps. The crew would then consist of—

- 2 Divers.
- 2 Signal men, at Rs. 50 each.
- 2 Hose-pipe tindals (4 are preferable), at Rs. 15 or Rs. 20 each.
- 8 Pump men, at Rs. 12 each.
- 1 Syrang in charge, at Rs. 20 to Rs. 25.

The divers you would pay according to skill from Rs. 80 to Rs. 240.

I can only repeat what I have said already that no true diver would have the smallest difficulty in stooping, kneeling or lying down for any reasonable time (say four hours) in 4 fathoms water, and would stay down one hour at a time, with intervals above water, for four hours in 10 fathoms.

READ—also the following Proceedings of the Board of Revenue (Land Revenue), dated 7th December 1887, No. 831:—

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

Read—the following letter from G. A. PHIPPS, Esq., Superintendent of Pearl Banks, to the Collector of Tinnevely, dated Tuticorin, 4th November 1887, No. 29:—

I have the honor to inform you that the 15,970 oysters lifted from the Tholayaram Par and referred to in my letter, No. 28, of the 18th ultimo, have now been washed and the pearls collected, sorted and valued by experts. I regret to say that the valuation is not promising, the oysters being found to be worth only Rs. 3-11-5 per 1,000, and with this both the Jaddithalavanmore and myself agree. When the oysters first appeared on the Tholayaram Par it was then thought that March 1888 would be the earliest date for fishing them, this of course being contingent upon their having produced pearls of a proper size and color. We are now of opinion that it would be disastrous to attempt a fishery so early as March next, and under the circumstances suggest that no further steps be taken in the matter before this month in 1888 when another sample may be lifted and its worth tested.

2. Upon comparing the samples of pearls of the fisheries of 1861 and 1862 with those of this and last year, I feel confident that the course suggested is the most advantageous one to pursue; it would, I think, be a great pity to fish and sell these oysters now for perhaps less than Rs. 10 per 1,000, when by waiting a year and allowing them to mature we may obtain three or four times that amount. I may mention that at the fishery in 1861 the highest price obtained was Rs. 22, while the following year they went up to Rs. 80.

3. I am not forgetful of the great risk that is run by allowing them to remain on the bank for one year longer; this cannot be avoided, and I can only express my great regret if in my anxiety to obtain an early fishery I may have misled Government, though I have always felt that the holding of the fishery for March of next year was open to doubt.

4. From my late examination of the bank, I am of opinion that the oysters have not diminished more than is to be expected, the average number brought up at each dive being 26 this year against 33 in November last, the percentage of dead being about 4 per cent.; this is not excessive and will become larger as the bank matures. The size is now from 2½ to 3¼ inches, but the outer part of the shell is still pliable, which is a sign that they have not reached the full extent of their growth. It is right to mention that the Jaddithalavanmore states the divers report that the quantity on the bank is less than last year. I am, however, not inclined to place much reliance upon their opinion.

5. For the satisfaction of the Board and to obtain another valuation, I would suggest that I may be allowed to come to Madras and in person explain any further reasons I may have to offer for the postponement of the fishery. If this is permitted, I will bring the other samples of pearls in my possession for comparison which will, I feel sure, convince the Board that a delay of one year is the most prudent course to adopt.

6. I beg to annex a formal statement of the valuation. A box containing the pearls is sent to you by banghy.

Endorsement by J. LEE-WARNER, Esq., Collector of Tinnevely, dated 5th November 1887, No. 712.

Forwarded to the Board (Land Revenue) for information.

2. I cannot admit that Captain Phipps has misled the Government in any way. It was always stipulated by him that the fishing would be dependent on the result obtained in the experiment, which has now been made. I was present at the opening of some oysters and the sifting of the sand in which pearls are found after the decomposition of the oysters, and I have no hesitation in saying that it would be suicidal in my opinion to hold a big fishery next March.

3. I have been particularly struck with the difference of the samples obtained in 1861 and 1862 from the same bank. The conclusion therefrom is quite irresistible that one year's postponement is necessary in this case. Should there be any doubt entertained on this point, I would suggest that Captain Phipps should be sent for to Madras with the various samples of previous fisheries now in his possession.

#### ENCLOSURE No. 1.

STATEMENT of the produce and valuation of 15,970 oysters taken from the Tholayaram Par.

| Name of bank and number of oysters. |        | DESCRIPTION, SIZE, NUMBER AND QUALITY. |                 |         |                    | WEIGHT.  |          |          |          | Value.    | Total value. | RATE OF VALUATION IN RUPEES. |              |    |
|-------------------------------------|--------|----------------------------------------|-----------------|---------|--------------------|----------|----------|----------|----------|-----------|--------------|------------------------------|--------------|----|
|                                     |        | Description.                           | Size in basket. | Number. | Quality in Chevru. | Kalongy. | Manjady. | Total.   |          |           |              | Per Chevru.                  | Per Kalungy. |    |
|                                     |        |                                        |                 |         |                    |          |          | Kalongy. | Manjady. |           |              |                              |              |    |
| Tholayaram Par.                     | 15,970 | Anie                                   | ..              | ..      | ..                 | ..       | ..       | ..       | ..       | RS. A. P. | RS. A. P.    | ..                           | RS. A. P.    |    |
|                                     |        | Kalippo                                | ..              | ..      | ..                 | ..       | ..       | ..       | ..       | ..        | ..           | ..                           | ..           |    |
|                                     |        | Pecell                                 | ..              | ..      | ..                 | ..       | ..       | ..       | ..       | ..        | ..           | ..                           | ..           |    |
|                                     |        | Vadivoe                                | 100             | ..      | ..                 | ..       | ..       | 1        | ..       | 1 10 0    | 1 10 0       | ..                           | 21 0 0       |    |
|                                     |        | Do.                                    | 200             | ..      | ..                 | ..       | ..       | 2        | ..       | 5 4 0     | 5 4 0        | ..                           | 120 0 0      |    |
|                                     |        | Do.                                    | 400             | ..      | ..                 | ..       | ..       | 2        | ..       | 5 4 0     | 5 4 0        | ..                           | 42 0 0       |    |
|                                     |        | Do.                                    | 600             | ..      | ..                 | ..       | ..       | 8        | ..       | 15 5 0    | 15 5 0       | ..                           | 35 0 0       |    |
|                                     |        | Do.                                    | 800             | ..      | ..                 | ..       | ..       | 11       | ..       | 17 1 6    | 17 1 6       | ..                           | 24 8 0       |    |
|                                     |        | Tool                                   | 1,000           | ..      | ..                 | ..       | ..       | 11       | ..       | 17 1 6    | 17 1 6       | ..                           | 24 8 0       |    |
|                                     |        | Mosie                                  | ..              | ..      | ..                 | ..       | 1        | 1        | 1        | 14 14 0   | 14 14 0      | ..                           | 14 0 0       |    |
|                                     |        | Shell pearl                            | ..              | ..      | ..                 | ..       | ..       | ..       | 1        | ..        | ..           | ..                           | ..           |    |
|                                     |        | Total ..                               |                 |         |                    |          |          |          |          |           |              | 69 6 6                       | ..           | .. |
|                                     |        | Average per 1,000 oysters ..           |                 |         |                    |          |          |          |          |           |              | 3 11 5                       | ..           | .. |

Read—the following letter from C. F. MACCARTIE, Esq., Acting Collector of Tinnevely, to the Secretary to the Commissioners of Land Revenue, dated 12th November 1887, No. 738:—

With reference to your telegram of the 11th instant, I have the honor to inform you that the Port Officer at Tuticorin has been instructed to send you direct 100 pair of average samples of empty pearl oyster shells.

Resolution—dated 7th December 1887, No. 831.

Submitted for the orders of Governn.

2. There is no necessity for Mr. P. satisfied that the pearls sent, are requisition are also too immature

3. It is presumed that the s part of the Tholayaram bank will be stated. It will be reported.

4. It should further have diminution of the oysters, would seem to be implied, the shells? Were their thin or wormed or entire; or had depths or to avoid crowding? any opinion of its own, or tend good enough to submit not only. The prime necessity for the record been more than once impressed.

5. The average sample of shells the first instance without the Board well as Mr. Phipps might have certainly bears evidence to them that the oysters are in much as when younger. It of a maturer growth as served oysters move as they grow of good enough to send sample.

6. If they move, the Queensland experiences point divers seems to be given only, divers would be likely to find

7. Looking to the disappointment of oysters, and also to the difference of divers as to their numbers, it is that forecasts and speculations are present means of observing the actual powers of the nude native their observations even at that confined as they must be to a judice of stereotyped ideas a intelligent prospecting over the seemingly through the medium

8. The time obtained by excellent opportunity for more banks if the Government will equipped and competent helmet Straits are indicated in Board's

(Tr

with a box of pearls.

to repair to Madras, the Board being and the shells since sent on the Board's fishing in March.

was an average one taken not from one parts. This should have been distinctly

what was the apparent cause of the unted for by present dead shells as And if so, what was the appearance of oken? Were the shells bored or fish-bitten appeared, indicating migration to greater s not placed in a proper position to form to Government unless Mr. Phipps will be as, but the facts on which he bases them. ing as exact and complete as possible has

is fished alive should have been sent in o require them, if only that the Board as of informing itself; their appearance. But there are not wanting evidences in ill piled one above another, though not so ve to compare these indications with those ht on the question whether or not pearl rcrowding. Mr. Phipps will therefore be nature lifting.

they do so in bodies or individually. The action; but the attention of naked native sely congregated masses. Only helmeted

experienced in the rate of growth of these on existing between Mr. Phipps and the parent, as the Board have always insisted, d on closer examination of actuals. The are at the bottom of the sea are limited to hey cannot penetrate beyond 9 fathoms; nor depths are necessarily most hurried, seconds, and that too subject to the pre-1 intelligences. Less hurried and more of greater depths can only be obtained tivers.

postponement of the fishery will give pepecting of the neighbourhood of known anction the employment of one properly- e dress and gear approved in the Torres dated 7th December 1887, No. 832.

Extract.)

(Signed) R. S. BENSON,  
Acting Secretary.

To the Secretary to Government, R.

Copy to the Collector of Tinney  
" " Superintendent of

ment,  
a box of seven pearls.  
Tuticorin.

READ—also the following Proceedings of the Board of Revenue (Land Revenue), dated 7th December 1887, No. 832:—

H. S. THOMAS, J. F.Z.S.

Read—the following letter from HUGI Resident, Thursday Island, Commissioners of Land Revenue, A

In reply to your request I have much information of your Board, all the particulars of the method adopted in these waters in prospect.

2. The boats in use are from eight to ten men, South Sea Islanders, and a few Japenese.
3. The divers employed are of all ages, even slightly deeper. At the lesser depth they can remain down for a couple of hours at a time.
5. The divers are invariably paid by the hundred shells, and not by wages in any other way.
6. Should any additional information be required with the same at any time.

ENCLOSURE

#### DESCRIPTION of pump and diving apparatus

**Pump.**—One Heinke's single action air pump. **Dresses.**—Two best quality double tanned leather, strengthened crutch, knees and wrists.

**Piping.**—Four 50 feet lengths of rope, thoroughly tested, fitted with double-capped couplings, serving this piping out to the boats, the which save the pipe from chafe.

**Helmet and corselet.**—One Heinke's helmet and corselet.

**Belt and knife.**—One diver's belt and knife. **Boots.**—One pair of diving boots.

**Leads.**—One set of leads for back and chest. **Flannels.**—Two suits diving flannels (jerseys).

**Plumper.**—One plumper, 15 or 20 lb. weight. **Plumper line.**—One plumper line, 25 fathoms.

**Life-line.**—One life-line, 50 fathoms, 2½ inches diameter.

**Shell bags.**—Two canvas shell bags. **Ladder.**—One rope ladder with wooden rungs.

**Tools.**—Two spanners for screwing up pipe. One key for corselet fly-nuts. One oil feeder.

Cost per month

Rations ...  
1 Diver, at £3 per 100 shell ...  
1 Tender ...  
4 Pump hands, at £2-10 each ...

N. Esq., Assistant Government Secretary to the Commissioners of Land Revenue, A

forwarding you, for the information of use in reference to the shelling industry.

ligger-rigged on two masts. but principally Malay, Manilla

from 8 fathoms to 18 fathoms, and from 12 to 14 fathoms, a good diver without inconvenience.

if shell they send up, i.e., so much

I shall be glad to furnish you

to each boat.

sses, red rubber collar, cuffs and

ating hose, steel wire embedded, and bound in with copper wire. Before d with canvas sewn on very lightly to

corselet with corselet plates, screws and sheath.

d stockings).

Manilla rope. pe.

at the bottom, 8 feet long.

e boat.

s. d.

16 5 (see ration list.)

0 0 Say he gets 500 shell in a month.

4 0 0

0 0 0

Average of 40 men at work on A.P.S. Co.'s Station.

16 5

#### RATION List per month.

|                          | £ | s. | d. |
|--------------------------|---|----|----|
| 4 Bags rice, each 50 lb. | 2 | 7  | 0  |
| 1 Bag flour              | 0 | 7  | 0  |
| 1 lb of tea              | 0 | 1  | 6  |
| 36 lb. of sugar          | 0 | 10 | 3  |
| 50 lb. Salt beef         | 0 | 16 | 3  |
| 32 lb Preserved meat     | 0 | 16 | 0  |
| 1 lb. Sardines           | 0 | 2  | 2  |
| 2 lb. Butter             | 0 | 2  | 3  |
| 2 lb. Candles            | 0 | 2  | 0  |
| 4 lb. Jam                | 0 | 2  | 8  |
| 2 Bottles pickles        | 0 | 1  | 6  |
| 2 do. vinegar            | 0 | 1  | 6  |
| 2 lb. Coffee             | 0 | 2  | 6  |
| 2 tins Salmon            | 0 | 1  | 9  |
| 1 lb. Curry powder       | 0 | 0  | 8  |
| 2 tins Milk              | 0 | 1  | 5  |
| Total ...                | 5 | 16 | 5  |

Average take of good diver who Torres Straits—Mt. Adolph N.W. Coast—King Sound, 2,

Cost of pump, &c.— £150 will cover all.

Life of pump, &c.— A pump will last for ever and pump and helmet Piping will last for 18 m A dress will last for 6 m

How is the shell brought up? If the diver is at work he send up his bag as soon as by the diver, as soon as immediately bends an empty then hauls on his life-line up and made the full one fast in full bag. In this way a dive full bags before he himself c 13 fathoms, when the diver the bag in his left hand, w

The bags are made of canvas rope handles, into one of which corners and sides of about 3 or 4

entiful— month. 1th.

a helmet and corselet. The pump leathers renewed every 18 months.

s with care. the patching will last another three.

ription of bags used—

13 fathoms, and the shell is plentiful, he will himself remaining on the bottom. This is done signalling to his tender in the boat, who the life-line and signals back to the diver, who own the empty bag; having taken this one off signals to the tender, who then hauls up the long time on the bottom, and send up several surface. In most cases, in water deeper than s bag, he signals to be pulled up and carries is ready to open or shut the helmet valve.

by 2 feet deep, roped round the mouth with ade fast. There are openings at the lower at the water out.

Average weight of each shell, 2½ lb: Average value, £100 per ton in London

Resolution—dated 7th Decemb

Submitted to Government October 1887, No. 606.

2. In connection with para December 1887, No. 831, it is su of the sort described should be o

3. The Board observe that water are 3 or 4 inches long. 1 margaritifera which is 7 inches oyster Avicula facata is only 3 inches in length.

332.

ion of Board's Proceedings, dated 6th

nd 8 of Board's Proceedings, dated 7th one complete set of pump and diving gear om England without delay.

gs in the canvas bag for letting out the ble for the Australian pearl oyster Avicula hinge to contour, but as our Manaar Gulf ss, the openings should be reduced to 2

4. The best thanks of the Board are  
Resident at Thursday Island.

(True Copy)

to Mr. Milman, Assistant Government

(Extract.)

4) R. S. BENSON,  
Acting Secretary.

11.12.24 II ✓

To the Secretary to Government, Revenue D  
,, the Government Resident, Government I  
Thurs

Copy to the Collector of Tinnevely.  
" " Port Officer, Tuticorin.  
" " Superintendent, Pearl Bar

Straits.

ORDER—dated 21st December 1887, No

Miscellaneous.

lency the Governor in Council that it is  
fishery of the Tholayiram oyster bank  
in thinking that further observations of  
European helmet and dress, and they de  
Board with the object of obtaining the se  
should also at once prepare an indent or  
one double action pump, so that both n  
Mr. Thorowgood. The second dress ca  
native divers, for with the experience a  
entertain no doubt that natives can, wit  
dress. Mr. Thorowgood will be asked  
him can be procured, and at what cost.

2. As regards the proposals made  
No. 606, dated 6th October 1887, G  
suggested deputation of Mr. James to  
boats and make inquiries, is entirely ou  
&c., might be procured from that cou  
however, be requested to, if possible,  
working model, with any drawings th  
appliances complete. The idea of obt  
tained. Setting aside the trouble and e  
back, if they would come at all, their e  
they would accept in India only salaries  
of employing them.

3. As regards the statements quo  
relative to the alleged bondage of the d  
cannot avoid the impression that this  
Mr. James' native informants. But ev  
would only be necessary for the District  
tracts as are alleged to have been mad  
the divers to repudiate their bargains.  
to the Judicial Department for such act

ue.

erusal of the report on the results  
experimental fishing made by  
pps has convinced His Excel  
le to postpone the proposed  
nent agree with the Board  
be made by a diver using the  
s should be instituted by the  
ly-qualified man. The Board  
for two diving dresses, with  
an one boat, as suggested by  
employed for the instruction of  
aits before them, the Government  
ity, be taught to use the European  
ere the cargo boat referred to by

edings of the Board of Revenue,  
ider that which refers to the  
rchase and bring up pearling  
as is that that diving dresses,  
ernment of Swan river will,  
rward to this Government a  
ssary, of a pearling boat and  
om Australia cannot be enter  
ing them up and sending them  
ralia appear to be so high that  
entirely preclude the possibility

aph 8 of the Board's Proceedings  
Tinnevely coast, the Government  
been very much exaggerated by  
y were to a great extent true, it  
to make the fact that such con  
to induce the greater portion of  
of Mr. James will be transferred  
appear necessary.

4. With respect to the crate a  
ings, Government consider that the  
tical trial. It is not ab

paragraph 10 of the Board's Proceed-  
no difficulty in subjecting it to a prac-  
t should be tested with pearl oysters.

act.)

(Signed) J. F. PRICE,  
Secretary to Government.

To the Commissioners of Land Rev  
,, the Judicial Department.

*Marine Department*

Exd. W. H. French.

50 Copies.

3-7-11/21  
14-7-99  
27/10/200  
3-6-99

**Gobt. of (1887) Madras.**  
**REVENUE.**

*Encl.*

**), 21st December 1887, No. 1180.**

**DECEMBER.**

**Pearl Fishery**

ed to be held in 1888.—Passing orders on  
posals of the Board to postpone the —  
depute Mr. James to Australia, and  
ating the remarks of Mr. James, relative  
e alleged bondage of the divers on the  
velly coast, to the Judicial Department for  
action as may appear necessary.



21ST DECEMBER 1887, No. 1181, REVENUE.

**REVENUE DEPARTMENT.**

**LETTER—from**

**THE SECRETARY TO THE GOVERNMENT OF  
FORT ST. GEORGE,**

**To**

**THE HON'BLE THE COLONIAL SECRETARY,  
Western Australia.**

**SIR,**

The Government of this Presidency being largely interested in pearl fisheries in the Gulf of Manaar, is desirous of making a trial of the system of diving followed on the Northern coasts of Australia by the pearl fishers whose chief head-quarters are understood to be Swan river.

Miscellaneous.

2. I am accordingly directed to request that His Excellency the Governor of Western Australia will kindly assist this Government in the matter, by procuring on its account and forwarding a working model, with such drawings as may be considered necessary, of a medium sized pearling boat, with all the most approved appliances for pearl fishing, excepting diving dresses and the fittings connected therewith. If this can be done, I am to ask that the model may be forwarded by P. and O. steamer to the care of the Port Officer at Colombo, with whom the officers of the pearl fishery here will communicate. I am further to ask whether the Government of Western Australia would, if necessary, undertake to purchase or have built for this Government a pearling boat with fittings, and if so, what the cost of it, including freight, &c., would be, and within what time it could be despatched.

3. The cost of the model, packing, freight, insurance, &c., will, I am to say, be remitted to you on receipt of an intimation of the amount.

4. I have in conclusion to state that this Government will feel much indebted to His Excellency the Governor of Western Australia for any information with regard to pearl-diving and the working of boats, apparatus, &c., that His Excellency may be able to afford.

I have the honor to be,  
Sir,

Your most obedient servant,

(Signed) **J. F. PRICE,**  
Secretary to Government.

**FORT ST. GEORGE,  
21st December 1887.**

**Exd. W. H. French.**

30 Copies.

1887.

TO THE HON'BLE THE COLONIAL  
SECRETARY,  
Western Australia.

From the Government of  
Fort St. George.

Issued

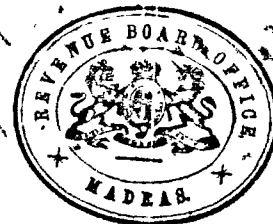
Recd.

Encl.

Letter, dated 21st December 1887,  
No. 1181.

DECEMBER.

Requesting the supply of a working model,  
with any drawings that may be necessary, of a  
pearling boat and appliances complete; and  
asking for information regarding pearl-diving  
and the working of boats, apparatus, &c.



Proceedings of the Board of Revenue

(Land Revenue).

Dated 6<sup>th</sup> October 1887

No. 606

H. S. Thomas, Esquire, J. L. S. J. Z.

Read Resolution:-

In their order dated 14<sup>th</sup> March  
1887, No. 476 Revenue, the Government  
negatived the Board's proposal made  
in their Proceedings dated 28<sup>th</sup> March 1887,  
No. 619, paragraph 8, that a sample boat  
should be obtained from Australia,  
and with all the requirements which a  
trial experience had there shown to be  
best suited to the profitable use of  
helmeted divers in pearl fishing. The  
Board therefore after repeating in  
their Proceedings dated 14<sup>th</sup> July 1887,  
No. 341, paragraph 3, their regret thereat  
reluctantly endeavoured to meet the  
difficulty by inviting the assistance  
of other port officers and obtaining  
forwarded the same to Government  
for acceptance in their Proceedings.

17<sup>th</sup> Oct 1887  
H. S. Thomas

N<sup>o</sup> 556 Dated 10<sup>th</sup> September 1887.

2. But on further consideration the Board venture once again to submit their original proposal to Government on the following grounds.

3. The lifting gear suggested by Mr. Wicks is at best admittedly and experimentally. Such experimental machinery is always liable to fail on account of some minor detail which is only discoverable under the strain of actual work. Should any such objection arise the means of removing the defect may well be wanting on the spot at Tuticorin. The check in the middle of operations while all the helmeted divers' pay, with that of their staff, was running, would in any case be expensive. The interests which Government have at stake are too large to be subjected to such risks.

4. In view of all these considerations

US

Considerations, the Board are of opinion that it will be much more economical in the end if the Government will depute either Mr. James or Mr. Wicks to proceed to Australia and there purchase two or more completely fitted out boats of the description there most approved for helmeted diving for pearls. Looking to the magnitude of the interests involved, the Board <sup>would</sup> suggest that the number of boats should be sufficient to carry the 25 divers originally contemplated by Government. G.O. dated 10<sup>th</sup> August 1886, N<sup>o</sup> 692.

5. If early orders are passed, there will be time enough for the selected officer to bring the boats to Tuticorin well in advance of the fishery in March. We shall then have boats and gear which we know have been subjected to the test of actual use and are the practical outcome of the interested energies and experience of

of intelligent Australian and English  
pearl fishers.

6. To the officer charged with this  
mission should also be entrusted  
the subsidiary question of how best  
to work the boats. It will be his  
duty to ascertain how many divers  
are employed in each boat, and  
whether they can be obtained in  
Bombay, or whether for any reason they  
should be engaged, if indeed it be  
possible, in Australia, and he should  
arrange that they come with diving  
dress and other appliances complete,  
or failing that he should ascertain  
all necessary details of what is the  
most approved dress &c., by what  
maker, so that it may be ordered  
out from England by telegraph, unless  
it be held ready in stock in Australia,  
and can be purchased and  
brought over with the boats without  
delay.

47  
7. Looking at the advanced state  
of the fishery, and the impossibility  
of looking with any certainty to a  
reply in time to the Board's reference  
to the Torres Straits made in Board's  
Proceedings dated 14<sup>th</sup> July 1887, N<sup>o</sup> 342,  
in pursuance of Government Order  
dated 14<sup>th</sup> May 1887, N<sup>o</sup> 476, the Board  
submit that decisive action should  
be taken in the manner proposed —  
without further delay.

8. Since the submission of Board's  
Proceedings dated 14<sup>th</sup> July 1887, N<sup>o</sup> 341,  
the advisability of employing helmeted  
divers has been resubmitted in  
Board's Proceedings dated 16<sup>th</sup> September  
N<sup>o</sup> 556, and the necessity would seem  
to be still further accentuated by the  
competition of Ceylon, to the possibility  
of which reference has been made  
in several Board's Proceedings, and  
which from a communication received  
from

8.0  $\frac{5767}{2795}$

4<sup>th</sup> July 1887, N<sup>o</sup> 340, para 9. in  
10<sup>th</sup> Sept 1887, N<sup>o</sup> 556... 8.

from Mr. James, Port officer of Pamban, would seem to be now a reality.

"Nearly all the divers on the coast are bondsmen of certain well-to-do families. The system is this, the rich man makes an advance of a sum of money to a diver, who, in turn, signs an agreement for himself and heirs, i.e., sons and grandsons to work only for the family of the lender. Of course, such a bond is perfectly illegal, but the ignorant natives don't know that. If steps are not taken to let them know that they are in no way bound, it may be bad for us; one man called Joaguino or Sowkunn who commands one of the Ceylon Emigration vessels has about thirty of the Keelakarai and Pamban divers so bound to him and he intends to take them all to Ceylon. There are others too who live at Keelakarai employed in the Emigration vessels who have men bound, and will take them away."

Sh

Of course

Probably all  
bound  
to work for him

49  
"It would be well to let the people know that they need not hold themselves by these bonds, and that sons and grandsons are free agents and not responsible for their fathers' acts. If boats are wanted, I can send at least fifty from this port of about five to thirty tons."

"I have just <sup>\* interviewed \*</sup> ~~mentioned~~ one of the bond holders and he says he has from 100 to 150 men bound to him, and he is going to take them to Chilam; he lives at Keelakarai and he says that 300 divers from that place alone are <sup>under bond</sup> ~~under bond~~ for Chilam. We can stop boats from going there. Under the Act of 1867 no boat allowed to leave the port without permission" but how about the men?"

9. The Collector of Tinnevely will be good enough to give his early and best attention to this subject of the supply of native divers and boats.

10. Since these Proceedings were permitted the Board heard that a crane is on its

31  
its way from Mr. James which he con-  
siders superior to that suggested by  
Mr. Wicks in Board's Proceedings dated  
16 September 1887, N. 556. The Board  
feel that it is not practicable for any  
one positively to predict with safety  
which of several devices will be the  
most advantageous without putting them  
to the practical test of actual use in  
the sea and subject to all the diffi-  
culties of depth and current &c under  
which they will be required to do  
service on the Pearl Banks, and they  
are of opinion that the proposal serves  
to emphasize the Board's judgment that  
the only safe way is to purchase what  
has been proved by actual experience  
in Australia to have borne the test  
of practical every day use for the  
special purpose.

(True Extract)

M. W. Wicks

Acting Secretary.

To, The Secretary to Govt. Rep. Depart.  
Colon of Timor, Park office, London W.

Loan  
 Revenue 1887. *Sept 1887*  
 Board of Revenue  
 (Land Revenue),  
 MADRAS. *No 8026.*

To

To

The Secretary to Government  
Revenue Department

Ad 8 Oct.

Proceedings, dated 6<sup>th</sup> October 1887.  
No. 606

*Subject.*

Submitting for further consideration, the Board's original proposal for obtaining a sample boat from Australia for the coming <sup>Pearl</sup> fishery at Tutuila.

REVENUE DEPARTMENT.

Current No. 8026, 8324, & 8526.

From Hon. L. McAnis Sept. 2 Bond. 2

Dated 6<sup>th</sup>, 5<sup>th</sup> Oct<sup>r</sup> & 22 Sept<sup>r</sup> 1887. *Repeating*

FOR ORDERS.

In C no: 8026, the Bird

On C No 8026 I agree with the Office note that the proposal put forward is not practical. Come up again with the proposal to obtain bearing

It is seem desirable that boats with all apparatus  
the Government sh<sup>d</sup> address  
the Government of Queen from Queensland. The writer  
land & Western Australia of the Proceedings, who is  
for information, models,  
edraones of the boats & evidently Mr. Thomas, goes  
fitting used at Thursday even further than the known  
Island & in the same river  
as an reference by the Bd did, in their Proceedings  
has not produced any re-  
sult so far (D. L. Pres. July anchored in F.O. No 476  
1887 No 341. para 4)

1887 No 341 (para 4)  
The divers' share sh<sup>d</sup> be  
one third (B.L. No 16 July  
1887 No 340 para 3)

C. No 7557. I agree that send either Mr James or  
Mr. W. H. W. may properly be sent to Australia  
(para 3) Also that Mr. W. H. W. to get up the boats and  
James & W. H. W. may help in the manner suggested

Collect information and (paras 11-16) if their  
services can be made  
it is even hinted, to procure available on which  
divers in Australia itself. The Marine Dept. should  
As regards this last point, again be asked. The gen.  
arrangements for  
a perusal is solicited of the nature of the work  
the article in the accom. in regard to the diving dress  
hanging. Copy of the "heads" apparatus which Dr.  
Wich's establishment  
will require. Think best  
If there is so much compe- prepare an incident or  
tition for divers, as is stated the Secretary of State in  
and if a man can earn it. The proposed for (say) 20  
as much as 300 dollars visit. Broun as proposed  
a month in Australia. "make enquiries. The  
necessary boats can be  
it is highly improbable that work in the neighborhood  
any divers can be obtained. part of the scheme is af-  
from that part of the world. all tentative and  
we must depend mainly  
Except on a salary which on Capt. Phillips & his divers.  
would be purposefully - don't think much of the  
high. The idea is quite will come to the front  
out of the question. Doubtless if there is a  
prospect of a good fishery.  
At the same time the  
District has to take  
of the cost of the boats and was enquired about it  
& put matters to right

as far as possible. fear or of our James.  
Bring all the pro. but Wick's proposed buy-  
ers record & print for could not get out of  
them including those  
disposed of in previous business under something  
miscellaneous boxes. like £500 or £600 at the  
least. Taking the boats  
at 10 tons each, they would  
at £10 a ton, a very low  
figure for a seagoing  
boat, cost £100 each  
without their special fittings.  
The teaching & preparation of helmeted divers and insurance, quite £150 or £200 for the officer's passage and expenses, to say nothing of his pay while absent. It would be all very well if foot could afford to do things "en prime" but they cannot, and it is a question for consideration, whether the possible advantages of the scheme

James. I think we might further ask the port of Amers-land to buy for us a really good boat actually ready for use with all the appliances, if and is available. The teaching & preparation of helmeted divers & insurance, quite £150 or £200 for the officer's passage and expenses, to say nothing of his pay while absent. It would be all very well if foot could afford to do things "en prime" but they cannot, and it is a question for consideration, whether the possible advantages of the scheme

PPH  
27 Oct  
29/10

put forward are such as  
to warrant the expenditure,  
which it will certainly not  
excite.

It is not apparent why  
the Board could not have  
obtained a working model  
on a fairly large scale  
of a pearling boat and  
all her gear. It would  
cost a few pounds and  
a full sized boat and  
fittings could be made up  
in India for far less than  
it would cost to get one  
over. The boat could  
easily be built and get  
ready for sea in a couple  
of months after obtaining  
the model. All the other  
information that Mr Thomas  
would wish the delegate  
to obtain can be procured  
equally easily by letter.

57  
The only information that  
could not be secured is  
that referring to actual  
working, but there is sure  
in Queensland some <sup>one</sup> of  
sufficient intelligence to  
be able to write a de-  
scription of this which  
could correctly guide a  
sailor of ordinary <sup>ability</sup> ~~understanding~~  
in carrying on operations.

The real truth is that  
Mr Thomas has an idea  
in his head and will  
not abandon it.

What he proposes  
means a very heavy ex-  
penditure and one to which  
if incurred, the Govt of  
India would be pretty  
certain to take very decided  
exception. It does not appear  
to be at all necessary.

A. for buying diving dresses  
in Australia, that is out of  
the question. They are not  
made there but at home,  
and for it they purchased  
as suggested; would he  
very probably <sup>import</sup> hadled over  
the coals by the Secretary  
of State. But Thoregood knows  
better than any one in Australia  
what is the best style of  
diving dress for the Indian  
Seas: what will do for  
the Boston water will do  
well enough for peering  
in the Gulf of Mexico.

59  
they can write for them,  
but it is not apparent  
what the use of these would  
be.

The whole thing is possibly more "bounced". If it is not, there cannot be much difficulty in the authorities making it known that such contracts such as <sup>mentioned</sup> are ~~entirely~~ as illegal and not binding. The divers will not be long with an offer of employment here in availing themselves of the position.

its being at once "put to"  
the practical test of use  
in the sea and subject  
to all the difficulties of depth  
and current &c. If what  
is stated in the article  
referred to in the beginning  
of this note is correct, the  
means by which oysters are  
lifted in Australian waters  
is of a very crude descrip-  
tion.

C ho: 7501 contains certain  
proposals with regard to the  
fishery to be held in March 1888.  
These have not been submitted  
to Honorable members for  
final orders, as a reference  
has been made to the Marine  
Department, whose reply  
(C ho: 8224) regarding the "big  
Madras" alone has been  
received.

C ho: 8224 may be

61  
disposed of by commu-  
nicating it to the Land Revenue  
Commissioners.

C ho: 8326 may be, it  
is submitted, recorded.  
It is confirmatory of the  
view held all along by  
Government.

If, however, there is  
only one diver to every  
pearling boat and 25 men  
are required, the item,  
"boats and gear" alone will  
make a very considerable  
hole in the allotment avail-  
-able for expenditure.

It seems desirable that  
some final orders should  
be passed at an early  
date. If diving dresses  
are to be used, they  
must be indented for  
soon. 25 seems to be a  
large number, especially  
when it is not yet known

whether any helmet divers  
 can be obtained. 12 <sup>1/2</sup> ~~thous~~  
 seem to be outside number  
 that it would be desirable  
 to obtain. The Tholozan  
 Par. cannot be fished in  
 a single season. It is  
 much more likely to take  
 three!

S

24/10

MB  
 24/10

Regarding <sup>Spence</sup> Pearl Fishery

For orders

65

Capital Cost.

|                                           | £. s. d. | at 18-6d the<br>official rate. | at current<br>exchange |
|-------------------------------------------|----------|--------------------------------|------------------------|
| Two sets of apparatus for two<br>divers — | 196-0-0  |                                |                        |
| one double pump.                          | 162-10-0 |                                |                        |
|                                           | 358-10-0 | Rs 4780-0-0                    | 5455-0-0               |
| Cost of fittings to be bought. (average)  |          | 325-0-0                        | 325-0-0                |
|                                           |          | 5105-0-0                       | 5780-0-0               |

Monthly establishment.

|                                            |         | Rs and P |
|--------------------------------------------|---------|----------|
| 2 divers on an average pay of Rs 160 each. |         | 320-0-0  |
| 2 signalmen.                               | 50.     | 100-0-0  |
| 2 hose-pipe tenders.                       | 17 1/2. | 35-0-0   |
| 8 pumpmen.                                 | 12.     | 96-0-0   |
| 1 Lorry in charge.                         | 22 1/2. | 22-8-0   |
|                                            |         | 573-8-0  |
| Two extra tenders.                         |         | 35-0-0   |
|                                            |         | 608-8-0  |

## PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read again the following G.O.s

- (1) G.O. 15-8-87, No. 4752  
 (2) " 15-8-87, " 4753  
 (3) " 27-9-87, " 5467

Read C. No. 8026.

G.O.

The arrangements and establishments proposed in the report of the Board, ~~Board~~ dated 16<sup>th</sup> Sept<sup>r</sup> 1887, No. 556, have the approval and sanction of Government.

An estimate of the cost of the ~~estimate~~ buildings &c. (vide enclosure)

to Capt. Phipps's letter No. 22 dated 30<sup>th</sup> June 1887) should be submitted at an early date.

2. The action <sup>of Capt. Phipps</sup> reported by ~~Capt. Phipps~~ in para. 22 of his letter *supra* is approved.

~~The~~ The notice issued will be translated as suggested and copies of that rendered

earnings in Australia appear  
to be so high that they would  
accept in India only salaries  
which would entirely  
preclude the possibility  
of employing them. Govt.  
have no objection to Mr.  
Wicks visiting Bombay  
to see what can be done  
with regard to procuring  
divers the Govt. had before  
- along this, he should visit  
Madras as soon as possible,  
and in consultation  
with Mr. Shorroghood, prepare  
an indent on the Secretary  
of State for, say <sup>12</sup> diving  
dresses and the ~~necessary~~  
apparatus <sup>required</sup> for working  
them. 5 The Board of  
Revenue should send a  
reminder regarding the  
communication which,  
from their Progs. No 341

<sup>suppl.</sup> <sup>Meaning</sup>  
The matter of teaching helmsmen  
in diving as helmsmen divers should  
have high attention

PROCEEDINGS OF THE MADRAS GOVERNMENT.

<sup>Read</sup> dated 14<sup>th</sup> July 1884, Govt.  
conclude that they have  
addressed to the Queensland  
Government. There is any  
time to receive <sup>a</sup> reply  
and take action on it,  
before the fishery is started.  
3 ~~to~~ As regards the  
statements quoted in paras  
of the Board's Progs. relating  
to the alleged bondage of  
the divers on the Pinnevel  
Coast, the Government  
cannot avoid the impression  
that this matter has been  
very much exaggerated  
by Mr. James's native  
informants. But even if  
the story were to a great  
extent true, it would be  
only necessary for the

District Magistrate to make  
the fact that such contracts  
were alleged to have been  
made are illegal, to induce  
the greater portion of the  
divers to repudiate their  
bargains. The remarks  
of Mr James will be  
transferred to the Judicial  
Dept. for such action as  
may appear necessary.

With respect to  
the crate alluded to in  
para 10 of the Board's Progs.  
Government consider that  
there need be no difficulty  
in subjecting it to a  
practical trial. It is not  
absolutely necessary that  
it should be tested with  
pearl oysters.

7/11.  
MS 7/11

He approves.

Considers that  
every necessary  
to be sent to  
Chief Secy for Committee  
instructed by and that he  
will make use of same  
21/11  
10/11



Revenue Secretariat,

8.11. 1887.

No 92

My dear Thoroughgood,

Excuse my troubling  
you but you are the authority  
best able to give me the  
information which I require.  
It has been decided not  
withstanding Captain Phipps  
opposition to the measure to  
employ helmet divers at the coming  
Pearl fishing.

Can you tell me the best  
make of diving dress and also  
parasols and the cost (under  
here of each separately; also  
the cost of fitting a boat for  
working with the diver, the stuff  
necessary for each diver &

the monthly pay of each  
member of it. I saw in an  
article on pearl fishing in  
Australia that there is but  
one diver to each boat.  
Is this correct or can two  
work?

Yours sincerely  
(sd) J. J. Price

a. b. m.

8

Madras Harbour Works.

Madras, Nov 11<sup>th</sup> 1887

No 986.

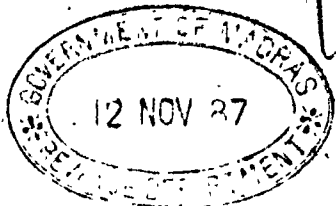
Letter to me  
has been sent  
to the printer

My dear Price

In reply to your letter of the  
12<sup>th</sup> Nov 1887

there is not much choice as  
the makers of diving apparatus,  
all being about equally good -  
Messrs: Henricke & Co, Messrs:  
Henricke & Davis, Siebe & Gorman  
& Denayrouze & Co are the great  
names - On these works I have always

being, kneeling or lying down



used Siebe & Gorman's gear,  
but on the works of the River Tyne  
Commissioners where I formerly  
was we always used Heinicke &  
Co's apparatus.

A complete set of apparatus for  
1 diver costs about £98 in London.  
A double pump for two divers at  
a time from one boat costs <sup>£</sup>162.10  
delivered here.

The boat should be a good stiff cargo  
boat fitted with a floor or bottom. Cost  
of fitting say about <sup>£</sup>250 to <sup>£</sup>400.

O. H. M.

It is best to have two divers <sup>79</sup>  
one boat & use the double pump.  
The crew would then consist of

- 2 divers
- 2 signalmen - <sup>£</sup>50 each
- 2 hose pipe binders - <sup>£</sup>15 or <sup>£</sup>20 ea.  
(4 are preferable).
- 8 Pump men - <sup>£</sup>12
- 1 syringe in charge. <sup>£</sup>20 to <sup>£</sup>25.

The divers you would pay according  
to skill. from R80 to R240 -

I can only repeat what I have  
said already that no true diver  
would have the smallest difficulty  
in stooping, kneeling or lying down

for any reasonable time (say 4 hrs  
in 4 fathom water, and would  
stay down 1 hour at a time, with  
intervals above water, for 4 hours &  
10 fathoms.

Yours sincerely

J. H. M. M. M.

( 1887. )  
REVENUE DEPARTMENT.

No. 116.

From

*From F. N. Tharayankal*

Dated 11

Received 12

*Nov. 1887*

Enclosures

No. ..

SUBJECT.

*Regarding cost of  
apparatus &c for  
helmeted divers in  
Pearl fishing*

BOARD OF REVENUE (LAND REVENUE), 7TH DECEMBER 1887, No. 831.

PROCEEDINGS OF THE BOARD OF REVENUE  
(LAND REVENUE).

H. S. THOMAS, ESQ., F.L.S., F.Z.S.

READ—the following letter from G. A. PHIPPS, Esq., Superintendent of Pearl Banks, to the Collector of Tinnevely, dated Tuticorin, 4th November 1887, No. 29 :—

I have the honor to inform you that the 15,970 oysters lifted from the Tholayaram Par and referred to in my letter, No. 28, of the 18th ultimo, have now been washed and the pearls collected, sorted and valued by experts. I regret to say that the valuation is not promising, the oysters being found to be worth only Rs. 3-11-5 per 1,000, and with this both the Jaddithalavamore and myself agree. When the oysters first appeared on the Tholayaram Par it was then thought that March 1888 would be the earliest date for fishing them, this of course being contingent upon their having produced pearls of a proper size and color. We are now of opinion that it would be disastrous to attempt a fishery so early as March next, and under the circumstances suggest that no further steps be taken in the matter before this month in 1888 when another sample may be lifted and its worth tested.

2. Upon comparing the samples of pearls of the fisheries of 1861 and 1862 with those of this and last year, I feel confident that the course suggested is the most advantageous one to pursue; it would, I think, be a great pity to fish and sell these oysters now for perhaps less than Rs. 10 per 1,000, when by waiting a year and allowing them to mature we may obtain three or four times that amount. I may mention that at the fishery in 1861 the highest price obtained was Rs. 22, while the following year they went up to Rs. 80.

3. I am not forgetful of the great risk that is run by allowing them to remain on the bank for one year longer; this cannot be avoided, and I can only express my great regret if in my anxiety to obtain an early fishery I may have misled Government, though I have always felt that the holding of the fishery for March of next year was open to doubt.

4. From my late examination of the bank, I am of opinion that the oysters have not diminished more than is to be expected, the average number brought up at each dive being 26 this year against 33 in November last, the percentage of dead being about 4 per cent.; this is not excessive and will become larger as the bank matures. The size is now from 2½ to 3½ inches, but the outer part of the shell is still pliable, which is a sign that they have not reached the full extent of their growth. It is right to mention that the Jaddithalavamore states the divers report that the quantity on the bank is less than last year. I am, however, not inclined to place much reliance upon their opinion.

5. For the satisfaction of the Board and to obtain another valuation, I would suggest that I may be allowed to come to Madras and in person explain any further reasons I may have to offer for the postponement of the fishery. If this is permitted, I will bring the other samples of pearls in my possession for comparison which will, I feel sure, convince the Board that a delay of one year is the most prudent course to adopt.

6. I beg to annex a formal statement of the valuation. A box containing the pearls is sent to you by banghy.

Endorsement by J. LEE-WARNER, Esq., Collector of Tinnevelly, dated 5th November 1887, No. 712.

Forwarded to the Board (Land Revenue) for information.

2. I cannot admit that Captain Phipps has misled the Government in any way. It was always stipulated by him that the fishing would be dependent on the result obtained in the experiment, which has now been made. I was present at the opening of some oysters and the sifting of the sand in which pearls are found after the decomposition of the oysters, and I have no hesitation in saying that it would be suicidal in my opinion to hold a big fishery next March.

3. I have been particularly struck with the difference of the samples obtained in 1861 and 1862 from the same bank. The conclusion therefrom is quite irresistible that one year's postponement is necessary in this case. Should there be any doubt entertained on this point, I would suggest that Captain Phipps should be sent for to Madras with the various samples of previous fisheries now in his possession.

## ENCLOSURE No. 1.

STATEMENT of the produce and valuation of 15,970 oysters taken from the Tholayaram Par.

| Name of bank and number of oysters. |        | DESCRIPTION, SIZE, NUMBER AND QUALITY. |                 |         |                  | WEIGHT.  |          |          |          | Value.    | Total value. | RATE OF VALUATION IN RUPEES. |              |
|-------------------------------------|--------|----------------------------------------|-----------------|---------|------------------|----------|----------|----------|----------|-----------|--------------|------------------------------|--------------|
|                                     |        | Description.                           | Size in basket. | Number. | Quality in Chev. | Kalungy. | Manjady. | Total.   |          |           |              | Per chev.                    | Per Kalungy. |
|                                     |        |                                        |                 |         |                  |          |          | Kalungy. | Manjady. |           |              |                              |              |
| Tholayaram Par.                     | 15,970 | Anie ..                                | ..              | ..      | ..               | ..       | ..       | ..       | ..       | RS. 1. P. | RS. A. P.    | ..                           | RS. A. P.    |
|                                     |        | Kalippo ..                             | ..              | ..      | ..               | ..       | ..       | ..       | ..       | ..        | ..           | ..                           | ..           |
|                                     |        | Pecell ..                              | 100             | ..      | ..               | ..       | ..       | 150      | 150      | 1 10 0    | 1 10 0       | ..                           | 21 0 0       |
|                                     |        | Vadivoe ..                             | 200             | ..      | ..               | ..       | ..       | 250      | 250      | 5 4 0     | 5 4 0        | ..                           | 120 0 0      |
|                                     |        | Do. ..                                 | 400             | ..      | ..               | ..       | ..       | 500      | 500      | 5 4 0     | 5 4 0        | ..                           | 42 0 0       |
|                                     |        | Do. ..                                 | 600             | ..      | ..               | ..       | ..       | 800      | 800      | 15 5 0    | 15 5 0       | ..                           | 35 0 0       |
|                                     |        | Do. ..                                 | 800             | ..      | ..               | ..       | ..       | 1100     | 1100     | 17 1 6    | 17 1 6       | ..                           | 24 8 0       |
|                                     |        | Tool ..                                | &               | ..      | ..               | ..       | ..       | 1100     | 1100     | 17 1 6    | 17 1 6       | ..                           | 24 8 0       |
|                                     |        | Mosie ..                               | 1,000           | ..      | ..               | ..       | 1        | 1000     | 1000     | 14 14 0   | 14 14 0      | ..                           | 14 0 0       |
|                                     |        | Shell pearl.                           | ..              | ..      | ..               | ..       | ..       | ..       | ..       | ..        | ..           | ..                           | ..           |
| Total..                             |        |                                        |                 |         |                  |          |          |          |          | 59 6 6    |              |                              |              |
| Average per 1,000 oysters ..        |        |                                        |                 |         |                  |          |          |          |          | 3 11 5    |              |                              |              |

READ—the following letter from C. F. MacCARTIE, Esq., Acting Collector of Tinnevelly, to the Secretary to the Commissioners of Land Revenue, dated 12th November 1887, No. 738:—

With reference to your telegram of the 11th instant, I have the honor to inform you that the Port officer at Tuticorin has been instructed to send you direct 100 pair of average samples of empty pearl oyster shells.

RESOLUTION—dated 7th December 1887, No. 831.

Submitted for the orders of Government with a box of pearls.

2. There is no necessity for Mr. Phipps to repair to Madras, the Board being satisfied that the pearls sent are too small and the shells since sent on the Board's requisition are also too immature to justify fishing in March.

3. It is presumed that the sample lifted was an average one, taken not from one part of the Tholayaram bank only, but from all parts. This should have been distinctly stated. It will be reported in detail now.

4. It should further have been reported what was the apparent cause of the diminution of the oysters. Was it to be accounted for by present dead shells as would seem to be implied, but is not clear? And if so, what was the appearance of the shells? Were their hinges intact or broken? Were the shells bored or fish-bitten or wormed or entire; or had the shells disappeared, indicating migration to greater depths or to avoid crowding? The Board is not placed in a proper position to form any opinion of its own, or tender any advice to Government unless Mr. Phipps will be good enough to submit not only his conclusions, but the facts on which he bases them. The prime necessity for the record of facts being as exact and complete as possible has been more than once impressed.

5. The average sample of shells stored as fished alive should have been sent in the first instance without the Board having to require them, if only that the Board as well as Mr. Phipps might have the means of informing itself; their appearance certainly bears evidence to their immaturity. But there are not wanting evidences in them that the oysters are in parts at least still piled one above another, though not so much as when younger. It will be instructive to compare these indications with those of a maturer growth as serving to shed light on the question whether or not pearl oysters move as they grow older to avoid overcrowding. Mr. Phipps will therefore be good enough to send sample shells of every future lifting.

6. If they move, the question arises do they do so in bodies or individually. The Australian experiences point in the latter direction; but the attention of naked Native divers seems to be given only to the most closely congregated masses. Only helmeted divers would be likely to find the others.

7. Looking to the disappointment experienced in the rate of growth of these oysters, and also to the difference of opinion existing between Mr. Phipps and the divers as to their numbers, it is the more apparent, as the Board have always insisted, that forecasts and speculations must be based on closer examination of actuals. The present means of observing the actuals of nature at the bottom of the sea are limited to the powers of the nude Native divers. They cannot penetrate beyond 9 fathoms; their observations even at that and other minor depths are necessarily most hurried, confined as they must be to a glance of a few seconds, and that too subject to the prejudice of stereotyped ideas and very limited intelligences. Less hurried and more intelligent prospecting over the wider area of greater depths can only be obtained seemingly through the medium of helmeted divers.

8. The time obtained by the proposed postponement of the fishery will give excellent opportunity for more thorough prospecting of the neighbourhood of known banks if the Government will be pleased to sanction the employment of one properly-equipped and competent helmeted diver. The dress and gear approved in the Torres Straits are indicated in Board's Proceedings, dated 7th December 1887, No. 832.

(True Copies and Extract.)

*N. M. Benson*  
Acting Secretary.

To the Secretary to Government, Revenue Department,  
with a box of seven pearls.

Copy to the Collector of Tinnevelly.  
" " Superintendent of Pearl Banks, Tuticorin.

Erd. J. Henriens.

no 9965-

REVENUE DEPARTMENT.

1887.

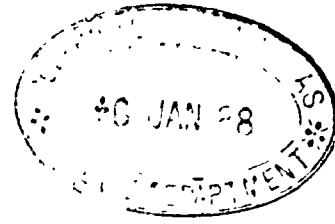
Board of Revenue

(Land Revenue),

MADRAS.

Printed December th.

Proceedings, 7th Dec. 1887, No. 831.

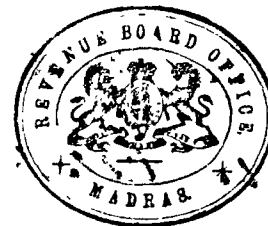


Submitting, for the orders of Government,  
papers relative to the question of postponing  
the pearl fishery proposed to be held in March  
1888 at Tuticorin.

Geo. No. 1180  
21.12.87



22 P23  
Dont Smith



Proceedings of the Board of Revenue  
(Land Revenue)

Dated 7<sup>th</sup> December 1887

No. 831

H. J. Thomas, Esquire, F.L.S. & F.R.S.  
the following letter from G. A. Shipps, Esquire,  
Superintendent of Pearl Banks, to the Secy.  
to of Government, dated 4<sup>th</sup> November 1887, No. 29.

I have the honor to inform you that  
the 15,970 oysters lifted from the Tholaynam  
Jar and referred to in my letter of 28<sup>th</sup> of  
the 18<sup>th</sup> ultimus have now been washed —  
and the pearls collected, <sup>sorted</sup> and  
valued by experts. I regret to say that the  
valuation is not promising, the oysters being  
found to be worth only Rs 3-11-5 per 1,000 and  
with this, both the Jaddithalamore and  
myself agree. When the oysters first appeared  
on the Tholaynam Jar, it was then thought  
that March 1888 would be the earliest  
date for fishing them, this, of course, being  
contingent upon their having produced  
pearls of a proper size and color. We are  
now of opinion that it would be disad-  
vantageous to attempt a fishery so early as  
March next and under the circumstances

suggest

suggest that no further steps be taken in the matter before this month in 1868, when another sample may be lifted and its worth tested.

2. Upon comparing the samples of pearls of the Fisheries of 1861 and 1862 with those of this and last year, I feel confident that the course suggested is the most advantageous one to pursue. It would, I think, be a great pity to fish and sell these oysters now for perhaps less than Rs 10 per 1000 when by waiting a year and allowing them to mature, we may obtain three or four times that amount. I may mention that at the Fishery in 1861, the highest price obtained was Rs 22 while the following year they went up to Rs 80.

3. I am not forgetful of the great risk that is run by allowing them to remain on the bank for one year longer. This cannot be avoided and I can only express my great regret if, in my anxiety to obtain an early Fishery, I may have misled Government, though I have always felt that the holding of the Fishery for

March

March of next year was open to doubt. 4. From my late examination of the Bank, I am of opinion that the oysters have not diminished more than is to be expected, the average number brought up at each dive being 26 this year against 33 in November last. The percentage of dead being about 4 per cent. This is not excessive and will become larger as the Bank matures, the size is now  $2\frac{5}{8}$  to  $3\frac{1}{2}$  inches but the outer part of the shell is still pliable which is a sign that they have not reached the full extent of their growth. It is right to mention that the Juddithalavannam states that the Divers report that the quantity on the Bank is less than last year. I am, however, not inclined to place much reliance upon their opinion.

5. For the satisfaction of the Board and to obtain another valuation, I would suggest that I may be allowed to come to Madras and in person explain any further reasons that I may have to offer for the postponement of the Fishery. If this is permitted, I will bring the other samples of pearls in my possession for comparison which

suggest that no further steps be taken in the matter before this month in 1888, when another sample may be lifted and its worth tested.

2. Upon comparing the samples of pearls of the Fisheries of 1861 and 1862 with those of this year, I feel confident that the course suggested is the most advantageous one to pursue. It would, I think, be a great pity to fish and sell these oysters now, for perhaps less than Rs 10 per 1000 when by waiting a year and allowing them to mature, we may obtain three or four times that amount. I may mention that at the Fishery in 1861, the highest price obtained was Rs 22 while the following year they went up to Rs 80.

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93  
March of next year was open to doubt.  
4. From my late examination of the Bank, I am of opinion that the oysters have not diminished more than is to be expected, the average number brought up at each dive being 26 this year against 33 in November last. The percentage of dead being about 4 per cent. This is not excessive and will become larger as the Bank matures, the size is now  $2\frac{5}{8}$  to  $3\frac{1}{4}$  inches but the outer part of the shell is still pliable which is a sign that they have not reached the full extent of their growth. It is right to mention that the Jaddithalamore states that the Divers report that the quantity on the Bank is less than last year. I am, however, not inclined to place much reliance upon their opinion.  
5. For the satisfaction of the Board and to obtain another valuation, I would suggest that I may be allowed to come to Madras and in person explain any further reasons that I may have to offer for the postponement of the Fishery. If this is permitted, I will bring the other samples of pearls in my possession for comparison which

1. I feel sure, convince the Board that a delay of one year is the most prudent course to adopt.

6. I beg to annex a formal statement of the valuation. A box containing the pearls is sent to you by Bangley.

Endorsement thereon of the Collector of Tinnevely, dated 5 November 1887, No. 712.

Forwarded to the Board (Land Revenue) for information.

2. I cannot admit that Captain Shippe has misled the Government in any way. It was always stipulated by him that the fishery would be dependent on the result obtained in the experiment, which has now been made. I was present at the opening of some oysters and the sifting of the sand in which pearls are found after the decomposition of the oysters, and I have no hesitation in saying that it would be suicidal in my opinion to hold a big fishery near Madras.

3. I have been particularly struck with the

95  
difference of the samples obtained in 1861 and 1862 from the same banks. The conclusion therefrom is quite irresistible that one year's postponement is necessary in this case. Should there be any doubt entertained on this point, I would suggest that Captain Shippe should be sent for to Madras with the various samples of previous fisheries now in his possession.

Read also the following letter from C. F. MacCartie, Esquire, Collector of Tinnevely, dated 12 November 1887, No. 738.

With reference to your telegram of the 11<sup>th</sup> instant, I have the honor to inform you that the Port Office at Tuticorin has been instructed to send you direct 100 pair of average samples of empty pearl oyster shells.

Resolution:-

Submitted for the orders of Government with a box of pearls.

2. There is no necessity for Mr. Shippe to repair to Madras, the Board being satisfied.

satisfied that the pearls sent are too small and the shells since sent on the Board's requisition are also too immature to justify fishing in Marsh.

3. It is presumed that the sample lifted was an average one taken not from one part of the Kolagarain Bank only, but from all parts. This should have been distinctly stated. It will be reported in detail now.

4. It should further have been reported what was the apparent cause of the diminution of the oysters. Was it to be accounted for by the present dead shells, as would seem to be implied, but is it not clear? And if so, what was the appearance of the shells. Were their hinges intact or broken. Were the shells bored, or fish bitten or wormed or rotten, or had the shells disappeared, indicating migration to greater depths or to avoid crowding. The Board is not placed in a proper position to form any opinion of its own, or tender any advice to

97  
to Government, unless Mr. Shippo will be good enough to submit not only his conclusions but the factors on which he bases them. The prime necessity for the record of factors being as exact and complete as possible has been more than once impressed.

5. The average sample of shells stored as fished alive should have been sent in the first instance, without the Board having to require them, if only that the Board as well as Mr. Shippo might have the means of informing itself. This apparently bears evidence to their immaturity. But there are not wanting evidences in their that the oysters are in parts at least still piled one above another though not so much as when younger. It will be instructive to compare their indications with those of a mature growth as serving to shed light on the question whether or not pearl oysters move as they grow older to avoid overcrowding. Mr. Shippo will therefore be good enough to send sample shells of every future lifting.

6. If they move, the question arises do they do so in bodies or individually. The Australian experiences point in the latter direction; but the attention of naked native divers seems to be given only to the most closely congregated masses. Only helmeted divers would be likely to find the others.

7. Looking to the disappointment experienced in the rate of growth of these oysters and also to the difference of opinion existing between Mr. Shipp and the divers as to their numbers, it is the more apparent, as the Board have always insisted, that forecasts and speculations must be based on close examination of actuals. The present means of observing the actuals of nature at the bottom of the sea are limited to the powers of the naked native divers. They cannot penetrate beyond 9 fathoms, their observations even at that and other minor depths are necessarily most hurried, confined as they  
much

29  
must be to a glance of a few seconds and that too subject to the prejudices of stereotyped ideas and very limited intelligences. Less hurried and more intelligent prospecting over the wider area of greater depths can only be obtained seemingly through the medium of helmeted divers.

8. The time obtained by the proposed postponement of the fishery will give excellent opportunity for more thorough prospecting of the neighbourhood of known banks if the Government will be pleased to sanction the employment of one properly equipped and competent helmeted diver. The dress and gear approved in the Torres Straits are indicated in Board's Proceedings dated 7<sup>th</sup> December 1887, No. 832.

(True Copies and Extracts)

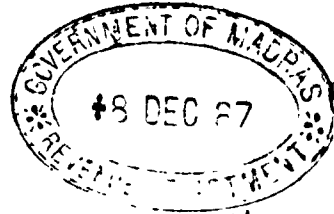
R. J. Benson  
Acting Secretary.

To, The Secretary to Govt. R.D. with a box of pearls & copy of a statement.  
Copy to. Collr of Immunity  
" Supt. Pearl Banks, Interoceanic

Revenue 1887. Deptt.  
Board of Revenue

(Land Revenue)

MADRAS.



To

The Secretary to Govt.  
Revenue Department

By 8 Dec.  
Proceedings, dated 7<sup>th</sup> December 1887.  
No. 83/ <sup>Misc.</sup> Routine Enclosures. 2.

Subject.

Submitting papers on the  
subject of the postponement  
of Pearl Fishery to be held  
in March 1888.

BOARD OF REVENUE (LAND REVENUE), 7TH DECEMBER 1887, No. 832.

PROCEEDINGS OF THE BOARD OF REVENUE  
(LAND REVENUE).

H. S. THOMAS, ESQ., F.L.S., F.Z.S.

READ—the following letter from HUGH MILMAN, Esq., Acting Government Resident, Thursday Island, Torres Straits, to the Secretary to the Commissioners of Land Revenue, Madras, dated 3rd October 1887:—

In reply to your request I have much pleasure in forwarding you, for the information of your Board, all the particulars that I think may be of use in reference to the method adopted in these waters in prosecuting the pearl shelling industry.

2. The boats in use are from eight to fifteen tons, lugger-rigged on two masts.
3. The divers employed are of all nationalities, but principally Malay, Manilla men, South Sea Islanders, and a few Japanese.
4. The fishing is pursued in water varying from 8 fathoms to 18 fathoms, and even slightly deeper. At the lesser depth and up to 12 to 14 fathoms, a good diver can remain down for a couple of hours at a time without inconvenience.
5. The divers are invariably paid by the take of shell they send up, i.e., so much per hundred shells, and not by wages in addition.
6. Should any additional information be required, I shall be glad to furnish you with the same at any time.

ENCLOSURE No. 1.

DESCRIPTION of pump and diving gear supplied to each boat.

- Pump.*—One Heinke's single action air pump with leathers, springs, wheels and handles.  
*Dresses.*—Two best quality double tanned twill diving dresses, red rubber collar, cuffs and wrist rings, strengthened crutch, knees and feet, Heinke collar.  
*Piping.*—Four 50 feet lengths of red rubber floating hose, steel wire embedded, thoroughly tested, fitted with double-capped connections and bound in with copper wire. Before serving this piping out to the boats, the whole is covered with canvas sewn on very lightly to save the pipe from chafe.  
*Helmet and corselet.*—One Heinke's helmet and corselet with corselet plates, screws and flynuts.  
*Belt and knife.*—One diver's belt and knife in metal sheath.  
*Boots.*—One pair of diving boots.  
*Leads.*—One set of leads for back and chest.  
*Flannels.*—Two suits diving flannels (jersey, drawers and stockings).  
*Plumper.*—One plumper, 15 or 20 lb. weight.  
*Plumper line.*—One plumper line, 25 fathoms, 2½ inch Manilla rope.  
*Life-line.*—One life-line, 50 fathoms, 2½ inch Manilla rope.  
*Shell bags.*—Two canvas shell bags.  
*Ladder.*—One rope ladder with wooden rungs weighted at the bottom, 8 feet long.  
*Tools.*—Two spanners for screwing up pipe connections.  
 One key for corselet fly-nuts.  
 One oil feeder.

Cost per month of working one boat.

|                              | £  | s. | d. |                                                    |
|------------------------------|----|----|----|----------------------------------------------------|
| Rations                      | 5  | 16 | 5  | (see ration list.)                                 |
| 1 Diver, at £3 per 100 shell | 15 | 0  | 0  | Say he gets 500 shell in a month.                  |
| 1 Tender                     | 4  | 0  | 0  |                                                    |
| 4 Pump hands, at £2-10 each  | 10 | 0  | 0  | Average of 40 men at work on A.P.S. Co.'s Station. |
| Total                        | 34 | 16 | 5  |                                                    |

13/12  
P. 15/12  
R. 15/12  
R. 17/12

## RATION List per boat per month.

|                              | £ | s. | d. |
|------------------------------|---|----|----|
| 4 Bags rice, each 50 lb. ... | 2 | 7  | 0  |
| 1 Bag flour ...              | 0 | 7  | 0  |
| 1 lb. of tea ...             | 0 | 1  | 6  |
| 36 lb. of sugar ...          | 0 | 10 | 3  |
| 50 lb. Salt beef ...         | 0 | 16 | 3  |
| 3½ lb. Preserved meat ...    | 0 | 16 | 0  |
| 1 lb. Sardines ...           | 0 | 2  | 2  |
| 2 lb. Butter ...             | 0 | 2  | 3  |
| 2 lb. Candles ...            | 0 | 2  | 0  |
| 4 lb. Jam ...                | 0 | 2  | 8  |
| 2 Bottles pickles ...        | 0 | 1  | 6  |
| 2 do. vinegar ...            | 0 | 1  | 6  |
| 2 lb. Coffee ...             | 0 | 1  | 9  |
| 2 tins Salmon ...            | 0 | 0  | 8  |
| ½ lb. Curry powder ...       | 0 | 1  | 5  |
| 2 tins Milk ...              | 5 | 16 | 5  |
| Total ...                    | 5 | 16 | 5  |

Average take of good diver where shell is plentiful—

Torres Straits—Mt. Adolphus, 1½ tons per month.

N.W. Coast—King Sound, 2½ tons per month.

Cost of pump, &amp;c.—

£150 will cover all.

Life of pump, &amp;c.—

A pump will last for ever with care, so will a helmet and corselet. The pump leathers and pump and helmet springs ought to be renewed every 18 months.

Piping will last for 18 months or two years with care.

A dress will last for 6 months and with little patching will last another three.

How is the shell brought up. Size and description of bags used—

If the diver is at work in less than about 13 fathoms, and the shell is plentiful, he will send up his bag as soon as it is full, he himself remaining on the bottom. This is done by the diver, as soon as his bag is full, signalling to his tender in the boat, who immediately bends an empty bag on to the life-line and signals back to the diver, who then hauls on his life-line until he pulls down the empty bag; having taken this one off and made the full one fast in its place, he signals to the tender, who then hauls up the full bag. In this way a diver will stop a long time on the bottom, and send up several full bags before he himself comes to the surface. In most cases, in water deeper than 13 fathoms, when the diver has filled his bag, he signals to be pulled up and carries the bag in his left hand, whilst his right is ready to open or shut the helmet valve. The bags are made of canvas 20 inches wide by 2 feet deep, roped round the mouth with rope handles, into one of which a lanyard is made fast. There are openings at the lower corners and sides of about 3 or 4 inches long to let the water out.

Average weight of each shell, 2½ lb.  
Average value, £100 per ton in London.

RESOLUTION—dated 7th December 1887, No. 832.

Submitted to Government in continuation of Board's Proceedings, dated 6th  
October 1887, No. 606.

2. In connection with paragraphs 7 and 8 of Board's Proceedings, dated 7th December 1887, No. 831, it is suggested that one complete set of pump and diving gear of the sort described should be ordered out from England without delay.

3. The Board observe that the openings in the canvas bag for letting out the water are 3 or 4 inches long. This is suitable for the Australian pearl oyster *Avicula margaritifera* which is 7 inches across from hinge to contour, but as our Manaar Gulf oyster *Avicula facata* is only 3½ inches across, the openings should be reduced to 2 inches in length.

4. The best thanks of the Board are due to Mr. Milman, Acting Government Resident at Thursday Island.

(True Copies and Extract.)

*R. J. Reinson*  
Acting Secretary.

To the Secretary to Government, Revenue Department.

„ Government Resident, Government Residency,  
Thursday Island, Torres Straits.

Copy to the Collector of Tinnevely.

„ „ Port Officer, Tuticorin.

„ „ Superintendent, Pearl Banks.

Exd. W. J. Lewis.

No: 9966

REVENUE DEPARTMENT

1887.

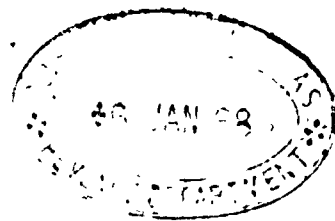
Board of Revenue

(Land Revenue),

MADRAS.

Printed December th.

Proceedings, 7th Dec. 1887, No. 832.



Submitting to Government letter from the Assistant Government Resident at Thursday Island furnishing particulars of the method adopted there of prosecuting pearl fishery.

8/12/87

107

Description of Pump and Diving Gear supplied to each boat.

241 + 225 = 466

Pump. 1. Hinkley's Single Action Air Pump with Leather, Springs, Valves and Handles.

Dresses. 2. Best Quality double Linned Twill Diving dresses, Red Rubber Collar, Cuffs, Wrist rings, Strong Hand Cribbs, Knees and feet, Hinkley Collar.

Piping. 4- 50 feet lengths of Red Rubber flanking hose, Steel wire embedded, thoroughly tested, fitted with double Capped Connections and bound in with Copper wire. Before serving this piping out to the boats, the whole is covered with Canvas sewn on very tightly to save the pipe from Chafe.

Helmet & Corset. 1. Hinkley's Helmet and Corset with Corset plates, screws, and fly ends.

Belt & Knife. 1. Diver's Belt and Knife in Metal sheath.

Boots. 1. Pair of Diving boots.

Leads. 1 Set of Leads for Back and Chest.

Glanets. 2 Suits Diving Glanets (Jersey, Drawers and Stockings).

Plumper. 1 Plumper - 15 or 20 lbs weight.

Plumper

9966/87

Plumper line 1 Plumper line 25 fathoms, 2 1/2 inch.  
 Manila Rope.  
 Life Line 1 Life Line 55 fathoms, 2 1/2 inch.  
 Manila Rope.  
 Shell bags 2 Canvas Shell bags  
 Ladder 1 Rope Ladder with wooden rungs  
 weighted at the bottom, 8 feet long  
 Tools 2 Spanners for screwing up pipe  
 connections  
 1 Key for Corset fly nuts.  
 1 Oil feeder.  
 Cost per month of working one boat.  
 Rations 5 16-5 (See ration list)  
 1 diver @ 3 L per hr } 15-0-0 Say he gets 500 shell in a month.  
 Shell  
 1 Tinder 4-0-0  
 4 Pump hand @ 2 1/2 each 10-0-0 Average of 40 divers  
 at work on A.P.S. Co.  
 Station  
 £ 34-16-5

Ration list.

Ration list per boat per month.  
 4 bags Rice each 50 lbs 2-4-0  
 1 bag flour 1-0-0  
 1 lb of Tea 1-6-0  
 36 lbs of Sugar 10-3-0  
 50 lbs Salt beef 16-3-0  
 32 lbs Preserved Meat 16-0-0  
 1 lb Garden seeds 2-0-0  
 2 lbs Butter 2-3-0  
 2 lbs Candles 2-0-0  
 1 lb Jam 2-0-0  
 2 bottles Pickle 1-6-0  
 2 bottles Sugar 1-6-0  
 2 lbs Coffee 2-6-0  
 2 lbs Sausages 1-9-0  
 1/2 lb Curry powder 0-8-0  
 2 lbs Milk 1-5-0  
 5 lbs Tea 16-5-0  
 Average take of food divers where shell is plenty  
 Torres Strait - Mr. Adolphus 1 1/2 tons per month  
 N.W. Coast - King Sound 2 1/2 tons per month  
 Cost of Pump &c.  
 £ 150 will cover all.

Life

## Life of Pump &c

A pump will last forever with care. So will a helmet and corselet. The pump leather and pump & helmet springs ought to be renewed every 18 months.

Piping will last for 18 months or two years with care.

A dress will last for 6 months and with a little patching will last another 3.

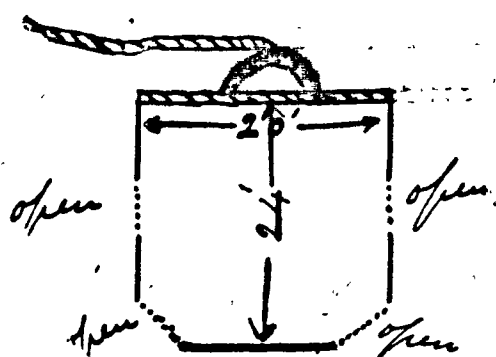
How is the shell brought up.  
Size and description of bags used.

If the diver is at work in less than about 13 fathoms, and the shell is plentiful, he will send up his bag as soon as it is full, he himself remaining on the bottom. This is done by the diver, as soon as his bag is full, signalling to his tender in the boat, who immediately sends an empty bag on to the life line and signals back to the diver who then hauls on his life line until he pulls down the empty bag, having taken this one off and made the full one fast

in

in its place he signals to the tender who then hauls up the full bag. In this way a diver will stop a long time on the bottom, and send up several full bags before he himself comes to the surface. In most cases, in water deeper than 13 fathoms, when the diver has filled his bag, he signals to be pulled up and carries the bag in his left hand, whilst his right is ready to open or shut the helmet valve.

The bags are made of canvas 20 inches wide by 2 feet deep, roped round the mouth with rope handles, into one of which a lanyard is made fast. There are openings at the lower corners and sides of about 3 or 4 inches long to let the water out.



Average weight of each shell  $2\frac{3}{4}$  lbs.  
Open Average value  
£ 100 per ton in London.  
True.

True Copy

N. D. Jones  
Acting Secretary



Proceedings of the Board of Revenue

(Land Revenue)

Dated 7<sup>th</sup> December 188

No. 832

Read

Read the following letter from the Assistant Government  
Resident, Government Residency, Thursday Island,  
Torres Straits, dated 3<sup>rd</sup> October 1884.

In reply to your request I have much pleasure  
in forwarding you for the information of your Board  
all the particulars that I think may be of use in  
reference to the method adopted in these waters in  
prosecuting the Pearl Shelling Industry.

The boats in use are from eight to fifteen tons  
lugged rigged on two masts.

The divers employed are of all nationalities, but  
principally Bretons, Bretonne men, South Sea  
Islanders and a few Japanese.

The fishing is pursued in water varying from  
8 fathoms to 10 fathoms and even slightly deeper,  
at

at the lower depth and up to 12 to 14 fathoms,  
a good diver can remain down for a couple of  
hours at a time without incurring  
inconvenience.

The divers are invariably paid by the value of  
shell they send up (i.e.) as much as 100 or 200  
shells and not by wages in any other  
manner.

Should any additional information be required  
I shall be glad to furnish you with the same at  
any time.

### Resolution

Submitted to Government  
in continuation of Board's Proceedings, dated  
16th October 1897.  
No 606.

In connection with paras 7 and 8 of Board's Pro-  
ceedings dated 4th December 1897, No 831, it is  
suggested that one complete set of  
during fear of the work described  
out from England without delay should be ordered.

The Board observe that the openings in the Canoe  
bag for letting out the water are 3 or 4 inches  
long. This is suitable for the Australian Pearl  
oyster.

115  
oyster Avicula Margaritifera which is 4 inches  
across from hinge to contour, but as our  
Gulf oyster Avicula fucata is only 3 1/2 inches  
across, the openings should be reduced to 2 inches  
in length.

The best thanks of the Board are due to  
Mr. Maclean, Assistant Government Resident  
at Thursday Island.

(True Copy and Extract)

R. W. Benson  
Acting Secretary.

4

The Secretary to Government R. S.  
with Copy of Enclaves.

The Govt Resident, Govt Residency, Thursday  
Island, Torres Strait.

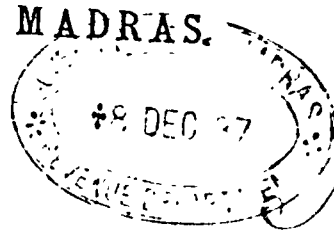
Copy to the Collector of Timor.

Port Officer, Subic Bay.

22/12/97  
JMS

Revenue 1887. Sept,  
Board of Revenue  
(Land Revenue)

MADRAS.



To

*WS 8/12*  
The Secretary to  
Government.

Revenue Department.

Adj. Secy.

Proceedings, dated *4th December* 1887.  
No. 832 *Ms.* Enclosures. 1  
*Revenue.*

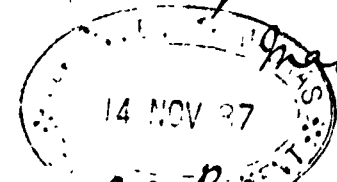
Subject.

Sekung. to Govt. letter from  
Assistant Govt. Resident,  
Govt. Residency, Thursday Island,  
Torres Straits, giving particulars  
of the method adopted in prosecuting  
Pearl Shelling Industry.

119

Government House,

*Madras, 14th Nov.*



My dear Mr Price,

I was to ask you  
if you will kindly bring this  
bundle at next Council.

Believe me,  
Yours sincerely  
*Jones*

J. F. Price Esq.  
Secretary to Govt.

c. 12/12  
R. 15/12  
R. 17/12  
R. 27/12

| INDIAN TELEGRAPH.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |         |        |               | Trans No. |      |        |  |  |  |  |                        |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|--------|---------------|-----------|------|--------|--|--|--|--|------------------------|--|
| To                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |         |        | From          |           |      |        |  |  |  |  |                        |  |
| (Station)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |         |        | (Station)     |           |      |        |  |  |  |  |                        |  |
| <table border="1"> <thead> <tr> <th>Words</th> <th>Rate</th> <th>Hour</th> <th>Minute</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                             |      |         |        | Words         | Rate      | Hour | Minute |  |  |  |  | OFFICIAL INSTRUCTIONS. |  |
| Words                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Rate | Hour    | Minute |               |           |      |        |  |  |  |  |                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |         |        |               |           |      |        |  |  |  |  |                        |  |
| To (Person)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |         |        | From (Person) |           |      |        |  |  |  |  |                        |  |
| <p>1. <i>From [illegible] to [illegible]</i></p> <p>2. <i>[illegible]</i></p> <p>3. <i>[illegible]</i></p> <p>4. <i>[illegible]</i></p> <p>5. <i>[illegible]</i></p> <p>6. <i>[illegible]</i></p> <p>7. <i>[illegible]</i></p> <p>8. <i>[illegible]</i></p> <p>9. <i>[illegible]</i></p> <p>10. <i>[illegible]</i></p> <p>11. <i>[illegible]</i></p> <p>12. <i>[illegible]</i></p> <p>13. <i>[illegible]</i></p> <p>14. <i>[illegible]</i></p> <p>15. <i>[illegible]</i></p> <p>16. <i>[illegible]</i></p> <p>17. <i>[illegible]</i></p> <p>18. <i>[illegible]</i></p> <p>19. <i>[illegible]</i></p> <p>20. <i>[illegible]</i></p> |      |         |        |               |           |      |        |  |  |  |  |                        |  |
| RCD. FROM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      | L. N.   |        | SENT TO       |           |      |        |  |  |  |  |                        |  |
| At                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      | Mts. By |        | At            |           |      |        |  |  |  |  |                        |  |
| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |         |        | Mts. By       |           |      |        |  |  |  |  |                        |  |

Telegraph Master.

P. O. 4000 - G. T. Press, - No. 49C - 18 0 55, - 174 0000

123

GOVERNMENT HOUSE.

I think 12  
lives are  
too many as  
an experiment

— C —

Current Nos 8026, 8224 + 8326.

also " " 9965 + 9966

D.O. from Mr. Thoroughgood.

From The Board of Revenue + Marine Dept.

Dated 188

FOR ORDERS.

The first three of the currents noted above have already been circulated. and a draft order was prepared. Before this was issued, however, it was learnt that an experimental fishing had proved so unsatisfactory that it was very doubtful whether it would be advisable to hold the big fishery in March next.

2. The official report on the results of this experimental fishery has now been received (Chs 9965) and it seems clear that a postponement is highly advisable.

The Board recommend that further observations of the oyster shd. be made by a helmeted diver and that for this purpose a set of the dress and gear used in Torres Straits shd. be pro-

\* Separate orders were issued on Chs. 8224 + 8326.

611

cured. These are described in Cho. 9966. In Torres Straits they appear to have only one diver from each boat, but in his D.O. of the 11<sup>th</sup> Nov. 1884 Mr. Thoroughgood suggests that two divers per boat would be best. If this course is approved a double pump shd. be procured.

It would also be as well to get two dresses in order to allow of natives of Tuti Corin being instructed. The cost would be

|                                              |                 |
|----------------------------------------------|-----------------|
| apparatus for 2 divers                       | £               |
| £98 x 2                                      | 196             |
| Add 10% (roughly) for freight insurance etc. | 20              |
| One double pump delivered in Madras          | 162.10          |
|                                              | <u>£ 378.10</u> |

or at the present rate of exchange Rs 5363. The cost of a boat must be added to this but at present it cannot be said what this will be. Mr. Thoroughgood says the boat should be a good stiff cargo boat fitted

I asked the Port-Office where ~~the~~ <sup>the</sup> ~~keel~~ <sup>keel</sup> has been insured. I think the price mentioned was 400 Rs. The place where the boat is built is Singapore.

12/12

X. H. necessary modifications  
Thoroughgood by letter 21/12/12

14/12

14/12

with a floor or bottom <sup>12</sup>? he puts the cost of fitting at Rs 250 to Rs 400. He might be asked to state what the cost of the boat itself wd. be and where it could be procured. But it is thought that inquiries shd. also be made, as already approved, of the Govt. of Western Australia regarding the boats used at the first part of Swan River, and that para 4 of the draft G.O. shd. stand and the draft letter issue. Mr.

Wicks might also be ordered to go to Bombay to procure the services of a diver, but it and could ~~arrange~~ also, if necessary, come to Madras to consult with Messrs Thorne & Thoroughgood regarding the gear required from England. Paras 6 and 7 of the draft G.O. might also stand.

Has  
10.12

The question of funds is being considered in connection with the Board's estimate of charges.

There is in the current budget of the  
the provision sufficient to meet the  
needs of the troops, & during the year  
to be they are not at a large amount. The  
operations would not commence  
until about 1st Jan and  
there is provision in the budget  
for 1888-89 sufficient to meet  
the cost of these.

Re - Pearl fishing

FOR ORDERS.

Rs 740 1180 of 21.12.87

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Local  
Goverment

To

The Honble the Colonial  
Secretary,  
Western Australia.

Sir

largely interested in the  
pearl fisheries

The Government of  
this Presidency being about  
to hold, in March 1888, an  
autonomous pearl fishing  
in the Gulf of Mannar,  
is desirous, <sup>in connection</sup> with the  
of making a trial of the  
system of diving followed  
by the pearl fishers on  
the Northern Coasts of  
Australia, whose chief  
head quarters are understood  
to be Swan River.

2. I am accordingly  
directed to request that

H. E. the Governor of Western  
Australia will kindly  
assist this Government  
in the matter, by <sup>procuring</sup> ~~procuring~~  
~~if possible~~, on its account  
and forwarding <sup>working model with such drawings as</sup> ~~on a medium~~ <sup>may be considered necessary,</sup>  
sized pearling boat with  
all the most approved  
appliances for pearl fishing  
excepting diving dresses  
and the fittings connected  
therewith. <sup>If this can be done, I</sup>  
<sup>am to ask that the model</sup> be forwarded by P. & O.  
Steamer to the care of the  
Port officer at Colombo  
with whom the officers of  
the pearl fishery here  
will communicate. <sup>I am further to ask whether the Govt. of Western Australia</sup>  
<sup>will, if necessary,</sup> <sup>undertake to purchase or have built</sup>  
<sup>for this Govt. a pearling boat with</sup>  
<sup>fittings and if so what the cost of</sup>  
<sup>it including freight packing &c</sup>  
<sup>would be and within what</sup>  
<sup>time it could be despatched</sup>

3. The cost of the boat  
packing, freight, insurance  
&c. will, I am to say, be  
remitted to you on receipt

of intimation of the  
amount.  
4. I <sup>have</sup> ~~am~~ in conclusion  
to state that this Govt.  
will feel much indebted  
to H. E. the Governor of  
Western Australia for any  
information with regard  
to pearl diving and the  
working of boats, apparatus  
&c. that His Excellency  
may be able to afford.

7/66 MS 7/11

Letter to the Govt of Madras  
Australia

133  
REVENUE DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read Again the following G. O.

- (1) G. O. 15-8-87, no. 4752
- (2) " 15-8-87 " 4753
- (3) " 27-9-87 " 5767

Also the following papers:-

- (1) C. no. 8026
- (2) D. O. no. 116 from Mr. Thoroughgood
- (3) C. no. 9965
- (4) C. no. 9966

mis

Order of 27-12-87 no 1180

A perusal of the report on the results of the experimental fishing made by Mr. Phipps has convinced His Excellency the Governor in Council that it is highly advisable to postpone the proposed fishery of the Thalayiram Oyster bank. The Govt. agree with the Board in thinking that further observations of the bank should be made by a diver using the European

helmet and dress, and they  
desire that inquiries should  
be instituted by the Board  
with the object of obtaining  
the services of a properly  
qualified man. The Board  
should also at once prepare  
an indent on the India Office  
for two diving dresses, with  
one double action pump, so  
that both men can work  
from one boat, as suggested  
by Mr. Thoroughgood. The  
second dress can be usefully  
employed for the instruction  
of native divers, for with  
the experience at Torres  
straits before them the  
Govt. entertain no doubt  
that natives can, without  
difficulty, be taught to use  
the European dress. Mr.  
Thoroughgood will be asked  
to state where the cargo boat

\* I have ascertained that  
Swan River is the chief centre.  
It is desirable if a boat is  
to be brought at all that it  
should be procured from  
Western Australia as the  
P & O Steamer can bring it  
up to Colombo.

27 135  
referred to by him can be  
procured, and at what cost.  
2. As regards the proposals  
made in the Procs. of the  
Board of Revenue no. 686  
dated 6<sup>th</sup> October 1884, Govt.  
consider that which refers  
to the suggested deputation  
of Mr. James to Australia  
to purchase and bring up  
pearling boats and make  
enquiries, is entirely out of  
the question as is that that  
diving dresses &c. might be  
procured from that country.  
The Govt. of Swan River  
will, however, be requested  
if possible  
to procure and, if possible,  
forward to this Government,  
a working model with  
any drawings that may  
be necessary of a pearling  
boat and appliances complete.  
The idea of obtaining divers

from Australia cannot be entertained. Setting aside the trouble and expense of bringing them up and sending them back, if they would come at all, their earnings in Australia appear to be so high that they would accept in India only salaries which would entirely preclude the possibility of employing them.

3. As regards the statements quoted in paras 8 of the Board's Procs. relative to the alleged bondage of the divers on the Tinian Coast, the Govt. cannot avoid the impression that this matter has been very much exaggerated by Mr. James's native informants. But even if the story were to a great extent true, it

46137  
would only be necessary for the District Magistrate to make the fact that such contracts as are alleged to have been made are illegal, to induce the greater portion of the divers to repudiate their bargains. The remarks of Mr. James will be transferred to the Judicial Dept. for such action as may appear necessary.

4. With respect to the crate alluded to in para 10 of the Board's Procs. Government consider that there need be no difficulty in subjecting it to a practical trial. It is not absolutely necessary that it should be tested with pearl oysters.

To  
16 The Comrs of L. R  
5. Judicial Dept  
5 The Marine Dept  
Des. 1-2-83  
50 Bu 26-1  
3.

2  
21/12  
20/12

No 1181 of 21.12.87

The Hon. The Colonial  
Secretary,  
Western Australia.

500000.26.1/2

The Government of  
this Presidency being  
largely interested in the  
pearl fisheries in the Gulf  
of Elbana, is desirous of  
making a trial of the  
system of diving following  
on the Northern Coast of  
Australia by the pearl  
fishers whose chief head  
quarters are understood to  
be Swan River.

2 I am accordingly  
directed to request that  
H. E. the Governor of Western  
Australia will kindly  
assist this Govt. in the  
matter, by procuring on  
its account & forwarding  
a working model with such

500000.26.1/2  
drawings as may be con-  
sidered necessary, of a  
medium sized pearling boat,  
with all the most approved  
appliances for pearl fishing  
excepting diving dresses,  
and the fittings connected  
therewith. If this can be  
done, I am to ask that  
the model may be forwarded  
by P & O. Steamer to the  
care of the Port Officer at  
Colombo with whom the  
officers of the pearl fishery  
here will communicate.  
I am further to ask whether  
the Govt. of W. Australia  
would, if necessary, under-  
take to purchase or have  
built for this Govt. a  
pearling boat with fittings,  
and if so what the cost of  
it, including freight &c.,  
would be, and within what

time it could be despatched.

3. The cost of the model  
packing, freight, insurance  
&c will, I am to say, be  
remitted to you on receipt  
of <sup>an</sup> intimation of the  
amount.

Draft G. O. and letter  
to the Govt of Western  
Australia.

4. I have in conclusion  
to state that this Govt. will  
feel much indebted to  
H. B. the Governor of  
Western Australia for any  
information with regard  
to pearl diving and the  
working of boats, apparatus  
&c that His Excellency  
may be able to afford.

With regard  
21/12

Has  
20.12 21/12

36  
2

S  
H