

an impression of bewildered justice, loth to judge blackfellows by European standards and yet conscious of the added jeopardy to the defenceless pioneers by failure to avenge a murdered settler. Miss Masson does not hide the difficulties with which the Northern Territory is confronted; she notes the high and rising cost of labour and the need for faith and patience. Statistics throw little real light on the present progress of the territory; so Miss Masson's sketches should prove a contribution of permanent value to its literature, as an instructive picture of the country during the most critical stage in its development.

J. W. G.

OPTICAL INSTRUMENTS AND THE MINISTRY OF MUNITIONS.

AT the end of November, 1915, there appeared in the *London Gazette* a notice issued by the Minister of Munitions under which power was taken to commandeer all optical instruments of importance for the defence of the realm. Since that date the Ministry of Munitions has been examining the available supply of such optical instruments, both in manufacturers' and dealers' hands. The examination, which has been a very heavy piece of work, had for its purpose the enforcing of certain restrictions placed upon the sale of such instruments under the Defence of the Realm Act Regulations, 1914, and it was recently announced that traders can only offer such instruments for sale if and when they are specially marked. The announcement appears in the January Army Order, in which it is stated that "two marks will be used, one indicating instruments which do not come up to the standard Government requirements, and the other instruments which come up to the required standard but are not required by the Government."

The instruments scheduled in the Order in Council are prismatic and Galilean binoculars, portable terrestrial telescopes, telescopic sights for rifles, periscopes and hyposcopes, prismatic compasses, as well as range-finders, mekometers, telemeters, clinometers, angle of sight instruments, apparatus for control of fire, dial sights, directors, and field plotters.

It will be noticed that the announcement does not specify for the information of general readers the actual marks which are being used; and, therefore, it will probably be of interest to describe them here. The first of the marks referred to is the broad arrow with the left-hand barb omitted, thus: . This mark is engraved or otherwise marked on instruments which have been examined under the instructions of the Ministry of Munitions and come within the terms and schedules of the Order in Council referred to above, but do not fulfil all the conditions specified by the Government as necessary for naval or military service. The instrument is not necessarily defective, but the mark means that in some optical or mechanical detail or details it is considered unsuitable for naval or military use. It

would, therefore, be well for an intending purchaser to examine carefully an instrument bearing the mark.

The second mark which may be found upon such instruments is the broad arrow with the stem omitted, thus: . This has been engraved or marked upon instruments which satisfy the Government's specification as instruments suitable for naval and military use, but not at present required by Government, and which therefore, presumably, may be disposed of by traders. Such instruments have satisfactorily passed the Government tests.

Instruments which do not come within the terms of the Order have not been marked, such instruments not being of the types required in quantity by the military authorities.

Although measures have been taken to secure for the purposes of the State all suitable optical instruments in the hands of makers and dealers, many more seem to be required, judging from the following announcement made a few days ago:—

The Ministry of Munitions and the management of the Lady Roberts's Field-Glass Fund desire to give publicity to the fact that there is still a great demand for the supply of field-glasses and telescopes for the troops in the field. Both prismatic and ordinary field-glasses are required, but not opera-glasses. The owners of such instruments are urgently requested to place them at the disposal of the fund, either by way of loan or sale. It is hoped that owners who are unable to lend their instruments will, in any case, be willing to sell them to the Government at a valuation figure. With this object in view, the Ministry of Munitions has made special arrangements to value any instruments offered for sale if found suitable for military or naval purposes, and payment will be made by the Ministry in accordance with the valuation figure. Instruments unsuitable for military or naval purposes will be returned to the senders. All instruments sent in, whether for loan or sale, and all letters should be addressed to the secretary, Lady Roberts's Field-Glass Fund, 72 Victoria Street, London, S.W.

The necessity for Government taking such steps at this critical time to supply the requirements of the naval and military authorities is an ample and striking justification for the demand, to which reference has been made from time to time in these columns, for the establishment of a National Institute or School of Technical Optics, which would have for its main object the placing of this country in a position in the future in which it would not be dependent on any foreign country for an adequate supply of instruments so vital for modern naval and military efficiency. Incidentally, such an institute would also secure national independence in the supply of the still more numerous and highly specialised optical instruments so essential in the arts of peace.

The importance of the subject has long been insisted upon by the British Science Guild, and the Technical Optics Committee of the guild has prepared several valuable reports upon it. This committee, after a full investigation of the evidence available, shortly after the outbreak of hostilities forwarded to the Board of Trade a report,

which was published in NATURE of March 25, 1915 (vol. xcv., p. 103), pointing out the urgent need for the provision of adequate facilities for systematic scientific and manual training in technical optics, and referring to recommendations made in July, 1914, for the establishment of a national institute, but no official action appears to have resulted. The main points of the position of the country as regards the manufacture of optical instruments and related matters are clearly stated in the report to which we have referred, and a course of action is indicated. Lack of official encouragement has been largely responsible for loss of our optical trade in the past, and for the action which the Ministry of Munitions has now had to take to provide sufficient instruments for purposes of war. If the Government neglects to provide for the future in a matter of such national importance as the promotion and development of scientific optical manufacture, it will lose an opportunity never likely to occur again. The need for a national institute is undoubted, and the outlay required is so small in comparison with the advantage to be gained by its establishment, that we cannot believe the delay in dealing with the matter is due to financial considerations, but rather to want of knowledge and to official incompetence.

THE SOUTH AFRICAN SEA-FISHERIES.¹

THIS report is of considerable general interest, since it contains an account of the development of the sea-fisheries in South African waters and a discussion of the factors, real and problematical, affecting the general productivity of the fisheries. Trawl-fishing by means of modern vessels began early in the 'nineties of last century, but for one reason or another most of these early enterprises were not successful. In 1895 the Cape Government took the matter up, and arranged to carry out a general biological survey. A steam vessel, the *Pieter Faure*, was designed and built specially for this work, and various new trawling grounds were discovered and investigated. As a result of this preliminary survey various private fishing companies began operations, some of which were unsuccessful. At present there are about eight steam-trawlers regularly engaged in fishing in South African waters, and an industry, limited in its scope, has apparently been well established. Such statistics as are available show a general rise in the productivity of the fishery, or at least, that it is being maintained; it is difficult to be certain as to the trend of the figures.

In South Africa, as in home seas, there have been misgivings as to the effect on the continuance of the yield of fish of various causes. Fluctuations occur and cause much discussion and demand for remedial measures, or prohibitions and restrictions by legislation. In the case of a fishery where these fluctuations may be due to

natural, uncontrollable changes or factors, or to variations in private enterprise, or to causes, such as over-fishing, which can be controlled, it is always difficult to know what is best to be done. Many of the causes alleged for the supposed diminution of the Cape sea fisheries seem to European readers to be imaginary. The noise and disturbance due to the running of trains along the sea-coast; firing guns; the use of dynamite; sea birds, seals, and porpoises; the increase of shipping, etc., would scarcely be regarded in Europe as competent causes. Nevertheless, the sea fisheries off the South African coast are very restricted, and factors which we could scarcely regard as operative in the North Sea may be significant in South African waters. A very good case is made out in the report for the destruction of large numbers of sea fishes by sudden changes in sea temperature due to the extension of cold bottom currents; by changes due to local submarine volcanic disturbances; and by the fouling of the water by masses of decaying plankton. All these are surely matters for scientific investigation, and this is all the more desirable since they are matters of exceptional marine biological interest. The really important thing in relation to the South African marine fisheries at present—more important than the promotion of private enterprises—is good, well-equipped, scientific, and statistical investigation.

The report deals with other matters of special interest. The crawfish (*Iasus lalandii*) has become a very important economic crustacean, and fairly large quantities are now canned and exported. It is the object of very careful fishery observations, and of good zoological investigation. There are reports on the destruction of fish and fish-spawn by netting; very interesting and well-written observations on the habits of South African fishes; an account of the snoek-fishes (allies of the mackerels); descriptions of three new species of marine fishes; and the first part of a catalogue of South African fishes in general. The volume is, altogether, one of much interest and value to science, apart from its special objects in relation to the local fishing industry. J. J.

NEW ANTISEPTICS.

BRIEF notices have already appeared in the Press and a fuller account in the *British Medical Journal* (August 25, 1915) on the use of sodium hypochlorite solution, made slightly acid with boric acid, for the treatment of wounds. This solution was first introduced by Dr. Dakin and applied with great success in the hospital at Compiègne and in other military hospitals. But this was not the only antiseptic submitted to examination and experiment at the Compiègne hospital.

An account by Drs. H. D. Dakin, J. B. Cohen, and J. Kenyon has just appeared in the *British Medical Journal* (January 29, 1915) on *chloroamine*. This compound, like many others in which

¹ Marine Biological Report No. 2, for the year ending June 30, 1914. Pp. 167+2 charts. (Union of South Africa, Cape Province, 1914.)