or Cape whiting, both of which have their centres of intensity at 150 fathoms, or even deeper. There is also the kingklip (in appearance like a ling), the dogfish, various soles and other flatfish, but the variety of economically valuable trawl fish so far obtained is not great. New fishing areas were discovered off Durban and off the Umvoti River, but neither of these are of sufficient size for steam trawlers. However, crayfish up to 12 inches occurred in immense numbers, a commercial trawler subsequently, in a haul of 1½ hours, taking more than 10,000. The results of the investigation indicate an abundance of life on all this eastern ground, and it must carry its due proportion of fish. Many small areas suitable for trawling appear likely to be disclosed by further survey, but it is not an area for steam trawlers, though, like the west coast of France, it should develop in time a considerable population of "longshore" men.

Turning to the south and west the reports give indications here of the possible development of an immense fishery. The *Pickle* demonstrated to the local trawlers the potentialities of deep-sea fishing, and new areas were found within a few hours' steaming of Cape Town. The most northerly trawlings were off Luderitz Bay, and it would seem probable that there is good ground right down to Cape Town; we should also expect similar ground further north as far as Union territory extends. Before such ground can be exploited commercially it must be surveyed, so that trawlers may avoid rough patches. To know the depth and nature of the bottom is not enough, and trawling tests are essential. Doubtless the fish migrate at different seasons, so that the latter tests will have to be undertaken at least twice over. It is an expensive business, of course—the running expenses of a trawler would be about 1000*l.* per month—but the encouragement of food production is a vital necessity to all States, while fish-meal is a bye-product of high value. In any event it is clear that South Africa has to the south and west an area more than capable of supplying all the fish that can at present be consumed; the western grounds alone may well prove as rich as those to the south of Ireland of about the same area, which in 1910 produced 1·35 million cwts.

With these potentialities in mind it is extraordinary to find that the fishery vessel is to be given up. In substitution a survey vessel, *Crozier*, is to be used at intervals for fisheries work. To employ a twin-screw vessel with a complement of 80 hands for such work is wretched economy, work which can be better done with a trawler and a crew of 14. The phase of using such Admiralty vessels for fishery work is one which nearly every country of Western Europe has passed through and abandoned; surely South Africa would be well advised to learn by their experiences. In any event we trust that the series of special reports on the fauna obtained by the *Pickle*, commenced in report 2, will be proceeded with; they are of high scientific value.

The Teaching of Elementary Geometry.[1]

THE Assistant Masters' Association recently appointed a committee to consider the teaching of elementary geometry; the report of this committee, backed by the authority of the Executive Committee of the Association itself, that of the Assistant Mistresses' Association, and that of the Educational Institute of Scotland, has now been published. The outstanding fact, and one of no little importance, is that the committee was appointed to produce an agreed sequence of propositions and has not done so. The terms of reference were:

(*a*) To examine the case for an agreed sequence;
(*b*) To suggest the best means of attaining the general adoption of the sequence agreed upon.

The most definite conclusions are:

VII. The committee does not feel that it is either desirable or possible at present to stereotype a sequence; and

I. No formal proofs should be required of Euclid I. 13, 14, 15, 4, 8, 26, 27, 28, 29. . . . The teaching of formal geometry should be based upon the quasi-axiomatic acceptance of these results.

The committee is unquestionably right in its belief "that the main difficulties due to variety of sequence will be removed if the first of its recommendations [*i.e.* I. just quoted] is generally accepted," and possibly the most valuable feature of the report is the extended currency it will give to this principle.

For the rest, the committee is concerned not so much with principles as with giving what help it can to the "very large number of teachers who do not claim to be experts in geometry" and who need "guidance amid the welter of sequences and methods . . . published during the last twenty years." From this modest and reasonable point of view little fault will be found with the detailed recommendations, though, as is freely admitted, there is room for difference of opinion on many points. A teacher who followed their scheme exactly would come to no harm.

The committee follows in the main the "Cambridge Schedule," with some expansions (which some will not think improvements) apparently designed to show exactly how it intends the propositions to be dealt with. For example, the section on areas begins with the rule for measuring the area of a rectangle and the section is more detailed than in the Schedule, clearly indicating a treatment different from Euclid's. It is pointed out at the end of Section VI. that Pythagoras's proposition and Euclid III. 35, 36 should be dealt with by the use of similarity as well as by Euclid's method. The report contains a needed warning (Recommendation IV.) against the slovenly use of the "method of limits" in dealing with tangency; and another (Recommendation V.) against ignoring the existence of incommensurables; "at the proper stage," the committee says, "the attention of the pupil should be called to the fact that the proofs given do not cover all cases."

A very important feature of the report is that certain propositions are marked with an asterisk, indicating that formal proofs of them should not be required in examinations. Some are marked also with a (†), indicating that no formal proof should be attempted in the class-room.

On this point the practice of Examining Bodies differs; most of them asterisk propositions, but some more, some less. It would undoubtedly be of great assistance to the schools if uniformity could be reached, and for this purpose the selection made by the committee might well be taken as the standard.

Altogether, the committee may be congratulated on its work; it has not set up obstacles to further progress, as with its terms of reference it easily might have done; on the other hand, the report will probably reach many teachers who need help and will give them much of the assistance they need.

[1] The Teaching of Elementary Geometry: Being the Report of a Special Committee appointed by the Incorporated Association of Assistant Masters in Secondary Schools. Pp. 15. (London: Oxford University Press, 1923.) 1s. net.