

result is eminently satisfactory. The reality which is given to the study so quickens the boys' interest that their work is much better done, and about one-fifth of the time usually given to the study is enough to bring them up to the usual standard of the open scholarship examinations. But the chief benefit is the effect on ordinary boys in the earlier stages, who can take pleasure and pride in their work when they feel able to use it. We have "Latin teas," Latin plays, and if you choose to address them in Latin on the playing field they will be pleased to respond.

By this reform it is possible to meet the objections usually brought against Latin by scientific men; for it really does teach the language, and at a very moderate cost of time; in the first four years only three-quarters of an hour a day.

W. H. D. ROUSE.

Perse School House, Glebe Road, Cambridge,
February 16.

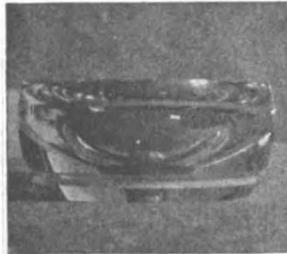
SUBMARINES.¹

THE author of "Submarines" is to be congratulated on having produced a well-written book upon a subject which has become of the greatest interest to a large world of readers. He tells us that this is not a technical book, and a doubt might arise lest it should in consequence be devoid of any clear or exact information, but this is not the case. The subject is so new and is so little understood that the excellent exposition of the whole subject to be found in the pages will, without doubt, command a large and immediate success. It would be difficult to expend the moderate price of 3s. 6d. to better account if making a present to any boy with an active mind, and the boy need not be so very young or the mind so very active—it is not written for boys—for the reader to be absorbed in interest.

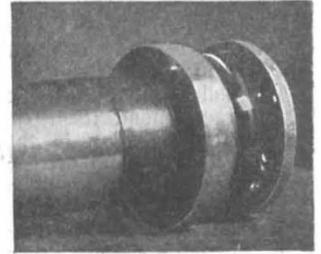
The book is not technical, *i.e.*, difficulties of ship-building design, metacentric heights at different immersions are not considered. The peculiar difficulties in the design of engines are not discussed, though allusion is made to some of the peculiar features of the Diesel engine in particular. Neither the optical problem of the periscope nor its solution is explained in relation to its optical niceties, though, of course, it is discussed generally. These widely differing features are referred to as showing in what way the book is not technical, and for the general interest of the subject as a whole it is well that it is not technical, for there is abundance of interest in the twenty chapters as they stand, and a technical discussion of the numerous items which go to build up the modern submarine would be manifestly impossible. The writer of this notice would only remark in this connection that the account of the periscope would be improved if the optics were a little more fully indicated and if, in particular, the "all round eye" periscope invented by Mr. Funnel and worked out by Mr. Niblett and by Messrs. Aldis had its optical principle more clearly explained. There is an excellent photograph of the all round view taken, not at sea, but in the middle of a street, with a central circular empty patch in which it

is proposed to present the direct ahead view on a larger scale (Fig. 1). There is a photograph of the peculiar and special all round lens looking something like a glass insulator for a piano-castor, but it is impossible to see how it works, and the photograph of the admirable view obtained by its use makes the insufficiency of the description the more tantalising.

In a subject where there is so much secrecy it is somewhat surprising to find so much information with respect to the German submarines, but this the author obtained directly from the Krupp Company of Essen. He was also provided



The lens unmounted.



The lens mounted in its tube.

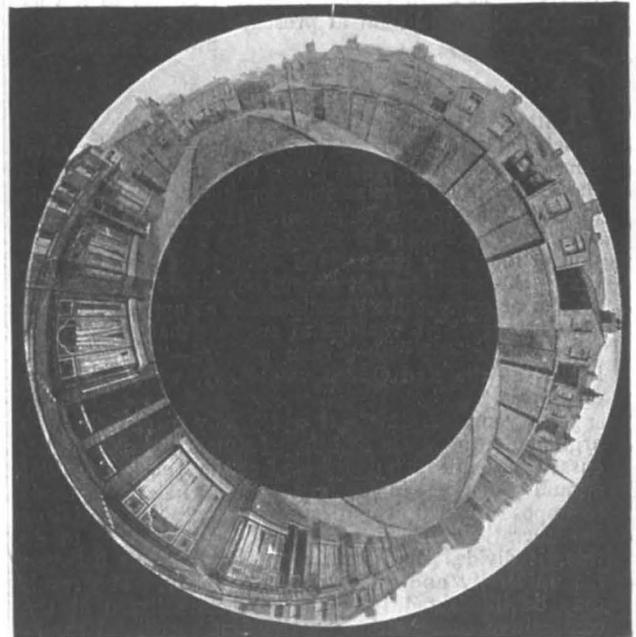


FIG. 1.—The wonderful "all-round view" periscope. The continuous view throughout the 360 degrees of the circle. From "Submarines," by F. A. Talbot. (W. Heinemann.)

with information by submarine builders in America, and from these and other sources he has been able to produce a large number of excellent pictures. It is satisfactory to know that the veil of secrecy surrounding the development of the submarine in this country appears to be unusually impenetrable.

The only misprint, or mis-writing of the nature of a misprint, is on p. 50, where the pressure of the sea-water at a certain depth is given as so many pounds per square foot instead of pounds per square inch.

C. V. BOYS.

¹ "Submarines: their Mechanism and Operations." By F. A. Talbot. Pp. x+274 (London: W. Heinemann, 1915.) Price 3s. 6d. net.