

and S<sub>1</sub> referring to the 15' prism, R<sub>2</sub> and S<sub>2</sub> to the 9' prism and R<sub>3</sub> and S<sub>3</sub> to the 3' prism.

For a rising star the correct sequence is  
R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, (reverse) S<sub>3</sub>, S<sub>2</sub>, S<sub>1</sub>.

For a setting star the order is  
S<sub>1</sub>, S<sub>2</sub>, S<sub>3</sub>, (reverse) R<sub>3</sub>, R<sub>2</sub>, R<sub>1</sub>.

*Telescope.* — This is a standard telescope of 13 mm. aperture and × 25 magnification. It is easily detachable for cleaning and stowing.

The present price of this instrument, one of which is on view in the International Hydrographic Bureau, is £102.10.0.

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### MICROMETER STATION POINTER.

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The following is a description of the Micrometer Station Pointer manufactured by  
H. HUGHES & SON, Ltd., London.

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In using an accurate station pointer of the older types in which the angle settings had to be made by verniers, working was slow and could not usually be carried on for very long owing to eyestrain. The vernier setting was also distinctly slow.

In the present instrument the verniers have been abolished and the angles can be set more rapidly and with much greater ease by means of the micrometers provided in place of the verniers. The micrometers read to single minutes and are easily read by the unaided eye.

The micrometers are thrown into or out of gear by thumb and finger pieces, the thumb and finger pieces serving also to move the arms round in setting the angles without lifting the instrument from the chart table.

The instruments are supplied with open centres or if preferred with raised centre and interchangeable prickler and pencil.

The usual extension arms are supplied and the attachment of these arms has been improved in detail.

When in use, the act of grasping the thumb and fingerpiece releases the clamp, the arm is moved round to the approximate angle without any alteration of the grip, the act of releasing the grip clamps the arm and a quick touch on the micrometer head finishes the exact setting of the angle. This arrangement gives the greatest possible accuracy, speed and ease of operation.

One of these instruments is on view at the International Hydrographic Bureau.

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### THE PRATT PROTRACTOR AND PLOTTING SCALE.

From an article in the *United States Naval Institute Proceedings*, Washington, December, 1934,

p. 1740.

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Mr. Herbert PRATT, a student at the University of Southern California, has invented an instrument which will enable the navigator not only to project the line of position but also to plot the line of position in his work-book or on any blank sheet of paper for any latitude from the equator to 60° north or south. The accuracy attainable with this instrument is the same as that obtained on Hydrographic Office plotting sheets 3000. Both the scales of the Pratt plotting scale and of the Hydrographic Office 3000 charts are the same, i. e. 4 inches to 1° of longitude. As the illustration depicts, it is similar