

XX.

U. S. Ship Vincennes,
Rio de Janeiro, December 15th, 1838.

SIR,—

You will proceed and make a survey of a shoal said to exist off Cape St. Thomas, about sixty miles north of Cape Frio, with the Peacock, Porpoise,* Sea-Gull, and Flying-Fish, which are placed under your command for the duty.

The shoal is supposed to be about twenty miles east-half-north from Cape St. Thomas.

In surveying it, as far as I am able to judge of its locality, I would recommend the following mode to be pursued, viz.:

On your arrival at or near its supposed locality, anchor your four vessels at convenient distances from each other, within a suitable distance for admeasurement by sound. Here ascertain your latitude and longitude accurately, measure your distance between all the vessels by sound, firing guns in succession, noting the elapse of time between the flash and report; then, or before, measure the azimuth between each vessel and the sun, and proceed with your boats to sound, radiating from each vessel on the several points of bearings: the position of your boats may be accurately ascertained by the angles on any three of the vessels, and the soundings obtained can at once be inserted on the skeleton chart prepared for the occasion.

You will, while at anchor, heave the current log every hour, and notice the direction by the head of your ship. After you have satisfactorily explored the ground that your vessel may have anchored on, you will then, in all probability, know the direction in which the shoalest water lies from you, and by shifting the anchorage of each vessel in succession toward that direction, you will occupy new ground, when the same operation of measuring bases by sound, and taking azimuths, will be gone through with, and then you may approach the position without any danger, as your chart will be constructed as you proceed.

Lieutenant Johnson has been ordered to the Porpoise to superintend her movements in regard to this survey, and Lieutenant Alden to your ship, in whose information, as respects the above mode of proceeding, you may rely.

Mr. Knox of the Flying-Fish, is also apt at this work. I have

* The Porpoise was not on this duty; these orders were countermanded, as she could not be prepared for sea in season.