

lected at every ten fathoms, for the purpose of ascertaining whether any effect is produced upon the specific gravity of the upper stratum by evaporation, and how far down this effect extends.

*Transparency of the Water.*—Observations for transparency should be taken at various depths and under different conditions by means of Mr. Siemens's photographic apparatus. As, however, the action of this depends upon the more refrangible rays, and the absorption of these and of the more luminous rays might be different, and that, in a manner varying with circumstances, such as the presence or absence of suspended matter, etc., the transparency of the sea should also be tested by lowering a white plate or large white tile to various measured depths, and noting the change of intensity and color as it descends, and the depth at which it ceases to be visible. The state of the sky at the time should be mentioned, and the altitude of the sun, if shining, roughly measured, or, if not shining, deduced from the time of day.

*Relation of Barometric Pressure to Latitude.*—In Poggendorf's "Annalen," vol. xxvi., 1832, p. 395, is a remarkable paper by Professor G. F. Schouw on the relation between the height of the barometer at the level of the sea, and the latitude of the place of observation. At page 434 is a rough statement of the results of his researches, the heights being given in Paris lines.

Lat.	Barometer mercury at 0° C.
0°.....	337·0
10°.....	337·5
20°.....	338·5
30°.....	339·0
40°.....	338·0
50°.....	337·0
60°.....	335·5
65°.....	333·0
70°.....	334·0
75°.....	335·5

The expedition might contribute to the examination of this law, not only by giving especial attention to the barometer observations at about the critical latitudes 0°, 30°, 65°, 70°, but also by comparing any barometers with which long series of observations have been made at any port they may touch at, with the ship's standard barometer.

It appears probable from Schouw's paper that certain meridians are meridians of high pressure, and others of low pressure.