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Secchi disk depth record: A claim for the eastern Mediterranean¹

Since its introduction during a cruise in 1865 on the pontifical steam corvette *Immacolata Concezione* (see Hutchinson 1957, p. 401) the Secchi disk has proved to be a remarkably effective means for determining the transparency of marine and freshwaters.

A reviewer of a recent paper of ours (Berman et al. 1984b) in which we gave results from the eastern Mediterranean expressed some doubt about the values reported for Secchi depths. (These ranged from 33 to 46 m for pelagic stations.) However, a literature search showed that others had observed comparable values both in freshwater (e.g. 44 m in Crater Lake: Larson 1972; see also Hutchinson 1957, p. 403; Larson 1984) and in the sea (47 m, south of Bermuda: Clark 1941). We now wish to report what appears to be a record for Secchi disk depth obtained during a recent cruise (AID-6) in the eastern Mediterranean. Using a marine standard, 40 cm, white Secchi disk viewed through a 20-cm hole in the "hero platform," five observers determined a depth of 53 m on 12 June 1984, at 1000 hours, at a hydrostation 31°51'30"N, 33°52'00"E about 45 km west

of Ashkelon. (Two observers claimed 54.5 m but this was not confirmed by the others.) We note that many limnologists routinely use disks of smaller diameters (e.g. 20 cm) which might yield slightly shallower Secchi depths than would be obtained with a 40-cm instrument. In theory the absolute maximum Secchi disk transparency which could be determined in daylight in a mythical ocean of 0.2- μm -filtered, distilled water would be about 70–80 m, depending on the value of the average attenuation coefficient of the water (Hutchinson 1957; Parsons et al. 1977).

In our studies of the pelagic waters of the eastern Mediterranean (Berman et al. 1984a) we found significant correlations between the inverse Secchi depth and both the diffuse downwelling attenuation coefficient and the chlorophyll concentrations in the euphotic zone (Megard et al. 1980). We suggested that, within defined oceanic areas, the use of the Secchi disk could facilitate the rapid acquisition of sea-truth data for calibration of airborne remote color sensors.

This "record" emphasizes the high transparency and oligotrophic character of the pelagic waters of the Levant Basin. It is likely that values for Secchi transparencies similar to those given here can be observed in other extremely oligotrophic waters. In an era of increasingly sophisticated instrumen-

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tation, we encourage other investigators not to neglect the prosaic but trusty Secchi disk, and we await counter claims for the record.

T. Berman
P. D. Walline
A. Schneller

Israel Oceanographic &
Limnological Research Ltd.
P.O.B. 8030
Haifa 31-080

J. Rothenberg

The Weizmann Institute of Science
Rehovot, Israel

D. W. Townsend

Bigelow Laboratory for Ocean Sciences
McKown Point
West Boothbay Harbor, Maine 04575

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