New observations on superficial waters circulation in the Western part of the Black Sea

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The paper presents the results of a drifting floats (bottles) experiment effectuated on August 2nd 1988 in the central area of the Romanian continental shelf of the Black Sea (fig.1). A number of 870 drifting bottles have been launched and 225 of them were recovered, along the entire western part of the Black Sea from Odessa to Bosporus and in the southern part from Bosporus to Sinop. This experiment follows a more ample one (5000 drifting bottles launched in 3 stages, June, July and August 1976) - whose results were published by Serpoianu and Nae (1977).

For the explanation of the drifting floats traces, daily resultants of the wind direction and speed for the month of August at Constantza have been calculated, using hourly meteorological observations (fig.1 a). The obtained data reveal wind inconstancy, a cha - racteristic of summer season at Romanian coast. This explains the instability of sea currents, emphasized by the identification places of the drifting floats (see fig.1).

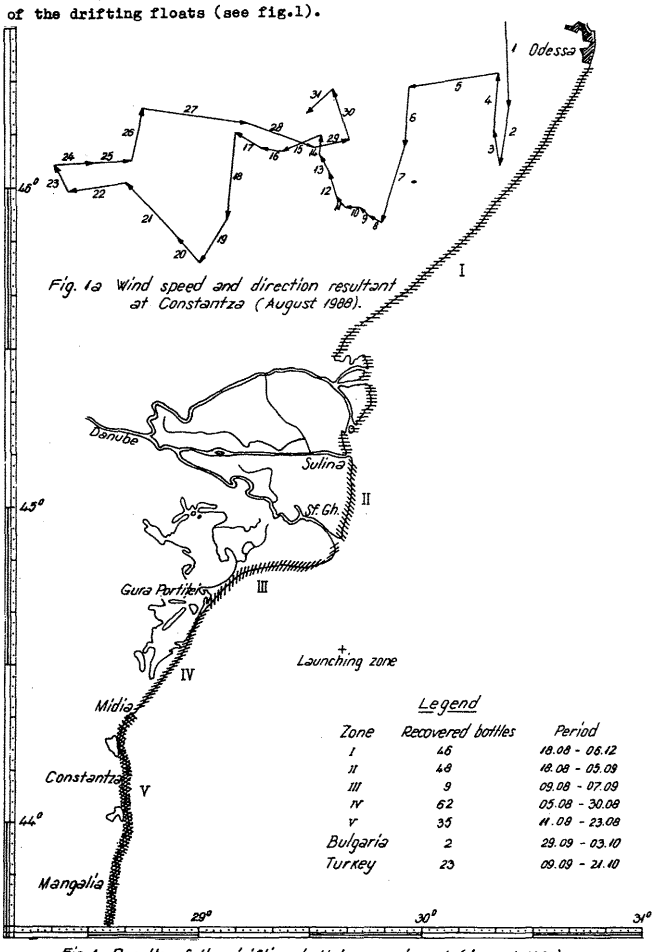

Fig. 1a Wind speed and direction resultant at Constantza (August 1988).

Fig. 1 Results of the drifting bottels experiment (August 1988).

We must notify that 67 % of the total recovered floats have been identified in August, exclusively from Odessa to Mangalia. At Bulgarian coasts 3 drifting bottles have been recovered and at the Turkey coasts 23. One should remark that after the first 3 days from the launching, the winds induced southward and northward currents. On 5 August, after strong easterly winds, the first drifting bottles reached the shore. Between 6 and 14 August the wind blew strong from north in the first two days and from south-east after that but with reduced intensity. Than, in 3 consecutive days (15, 16, 17 August) easterly winds determined the presence of the drifting bottles in the entire zone from Odessa to Mangalia (see fig.1 and 1 a). We consider that all the recovered floats in this area reached the shore until 24 August but a part of them were identified after that.

The constant westerly winds between 24 and 29 August determined a seaward drift of the bottles which had not reached the shore yet and than they were carried southward by the western cyclonic Black Sea current, a fact proved by the identified floats at Bulgarian and Turkey coasts.