

## THE BLACK SEA AND ITS BORDERLANDS

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Of the major coastal waters that fringe the Mediterranean Basin the Black Sea is perhaps the least well-known. For the most part this is due to the factor of location. It is too far off the main *through-water route*—Gibraltar to Suez. Odessa is 1,000 miles north from this route. After all, the Black Sea is commercially a "blind alley". The ships that use it are mostly *tramp steamers* carrying out grain, oil, lumber and manganese, not the *trim passenger liners* usually associated with the "Mediterranean Cruises".

The Sea is really a sizeable sheet of water, a little smaller than the Caspian, about the same size as the Baltic, over  $1\frac{1}{2}$  times the area of all of our Great Lakes combined. Into it debouch several of the largest rivers of central and eastern Europe so that it is the catch-basin for about one-fourth of the whole continent. Since it is almost isolated from the ocean, tides have little effect and the rivers empty through vast swampy deltas. Many of the more important ports are, as a consequence, located either on the stream above the delta or on the coast some distance from the delta mouths. Rostov on the Don is an example of the first; Odessa, between the Dneestr and Dnepr, illustrates the second.

Some of the most interesting characteristics of the Basin are explained by its geologic history. Unlike the shallow North, Baltic and White Seas, formed by the gradual encroachment of ocean waters onto adjacent lowlands, the Black Sea, like the Mediterranean and Caspian, was formed by faulting and the foundering of large blocks of the earth's crust. Features likely to be found as a consequence of this type of origin are: (1) Great depths. Extensive areas of the Black Sea bottom are over 6,000 feet deep. (2) High coasts. In the Black Sea littoral only for two short stretches do extensive plains meet the water. These are at the Gulf of Odessa and the Sea of Azov. (3) Regular coast lines. The Black Sea has very few islands and good natural harbors are lacking. Breakwaters must be

built and much of the loading and unloading of steamers is done by lighters.

Finally, an "accident" in geologic history seems to be responsible for the peculiar condition of the deeper waters. These lower levels of the Black Sea are charged with hydrogen sulphide and there is there an absence of the higher forms of organic life. During the Glacial Period much sea water was withdrawn to form the great ice sheets, the sea level was lowered and the Black Sea became an inland fresh water lake whose outlet was through what is now the Bosphorus-Dardanelles gap. With the return of warmer temperatures, the ice melted and the sea level rose so that salt water poured from the ocean into the Black Sea. This destroyed the fresh water fauna which had developed there and although that was thousands of years ago the lower stagnant waters remain poisoned by the decompositions products and fish are absent. The surface waters, however, are well populated and in some parts of the coast, eg. the Danube delta, fishing is an important item of the domestic economy.

Climatically the Euxine, by which name the Black Sea was known to the Greeks, is in marked contrast with the Mediterranean. Entering by way of the Bosphorus one feels that the name given by the Turks—"Black Sea" is very appropriate. You leave behind the blue waters, the clear air and bright skies for dark stormy waters, overcast heavens and dense fogs. Except along the southeast littoral, the borderlands receive rather light rain and their native vegetation is grass or steppe. Temperature ranges are greater than in the Mediterranean. The January isotherm of 32°F.—the same which passes through St. Louis—crosses a little to the south of the main Russian coast so that all of the rivers from the Danube to the Don, as well as the harbors, are ice bound part of the year. Odessa averages two or three weeks of ice; the Kerch Strait at the outlet of the Sea of Azov is closed for twice that

period. In this rather dark climatic setting there are two "bright" spots. In and about Batum, and on the southern tip of the Crimean peninsula, are outliers of the Mediterranean climate. Of the two the latter is far more interesting.

Utting far out from the mainland the commanding position of Crimea has long made it a bone of contention among rival commercial powers. Indeed, to the average American, the peninsula is synonymous with the Crimean War, the "Charge of the Light Brigade" and the pioneering work of Florence Nightingale. The incidents of the Peninsular War are now commemorated by a multitude of memorials and cemeteries near Sevastopol, the great Soviet naval base. However, Crimea has played a double role—that of a playground as well as a battleground. Russian travel literature refers to it as the "little paradise" and the "Russian Riviera". For most of the peninsula these titles are decidedly inappropriate. If one approaches from the mainland, for example, Crimea appears to be but a continuation of the dry, monotonous steppe of adjacent Russia. However, the Yaila Mountains an outlier of the Caucasus, parallel the southeastern coast and serve as a wind-break. Wedged in between these ranges and the sea is a climatic oasis—a land of mountains, sea, and flowers. To the north of these protecting ridges lies the windswept steppe, parched by drought in summer, and blanketed by cold and snow in winter. On the south, although in the latitude of Minneapolis, are found the mulberry, fig, olive and vine. Ice here is rare. The January mean is 20° warmer and the rainfall four to five inches greater than on the steppe. Little wonder that for cold Russia it should be regarded as a "paradise" and a popular resort for Czarish wealth and fashion. Today the royal residences, palaces and luxurious hotels have been transformed into rest houses for Russian workers.

The most interesting of the Black Sea features is the slender bottleneck outlet—the Dardanelles-Marmara-Bosporus waterway. The opening totals 52 miles in length and in form suggests a north-south winding corridor with a vestibule

in the middle. It narrows to one-half mile in the Bosphorus; the coasts are rugged and there are numerous islands. A strong outward surface current flows to the Aegean, averaging about three miles per hour, but at times having twice that rate in the narrows. This is too swift to row against and in the days of sailing vessels, if combined with a strong north wind, ships might be held up in the Straits for a week at a time. A submarine current of heavy salty water flows toward the Black Sea. At Istanbul this return movement is at a depth of 60 feet and moves about four-fifths miles per hour. In configuration the Bosporus is a strait, in flow, a river and in depth, a sea.

Few important waterways are so easily defended for it allows control of all shipping by a nation without a *single* ship. Even the current can be used for floating mines among attacking vessels seeking to enter from the Aegean as was well-shown in the disastrous attempt of the British in World War I. Naturally this was a perfect stronghold for pirates and one of the world's strongest bands of sea raiders infested the Straits in the 16th century. The strategic and commercial significance of the Straits all through history is evidenced by the rows of ruins of cities and forts which line the shores on either side. Except for a brief period of internationalization, 1920-1936, Turkey has ruled the waterway for the past 500 years.

The Straits provide a water gateway for the Black Sea though in so doing they necessarily interrupt the land route from Europe to Asia. The intersection of these two provides a *situation* for a great commercial center. The drowning of a tributary of the Bosporus—the Golden Horn—provides the *local site*—a harbor protected from the currents of the main waterway. Given this magnificent setting, Constantinople for centuries during the Middle Ages was the world's leading city, but the blight of Turkish control has never allowed the full utilization of the opportunities offered even though few cities have equalled it in dramatic interest. In a recent typical year only five percent of the shipping through the Dardanelles was Turkish.