

GEOLOGY

100,000-Year-Old Carcasses Explain Black Sea Poisoning

CARCASSES of beasts that died a hundred thousand years ago or more still choke the bottom of a large part of the Black Sea, and still poison the water there with the noisome products of their decay.

This explanation of the Black Sea's 200,000 square miles of "poison water" was offered by Prof. Reginald A. Daly of Harvard University, who delivered the Silliman lectures at Yale University.

During the last great Ice Age, Prof. Daly explained, so much water was locked up in the great glacial sheets that the sea level was materially reduced. The Black Sea was thus filled with fresh water, and the overflow river of this enormous lake cut the valleys now represented by the Bosphorus and Dardanelles straits. When the general sea level rose again, the salt Mediterranean water entered the fresh water basin and killed its fresh-water animals. The decay of their carcasses poisoned the Black Sea water, from the bottom at the depth of 110 fathoms or 200 meters up to the 90 fathom or 150 meter level, Prof. Daly stated.

"Through that great thickness, a half million square kilometers of water remain poisoned to this day."

"The Glacial lowering of general sea level laid bare wide belts of the continental shelves, now bounded by the 40 fathom line," Dr. Daly said. "Those strips of new land were several hun-

dreds of thousands of miles in total length and up to 100 or more miles in width. Across the temporary lands the rivers were extended and there cut channels in the shelf sediments.

"An illustration is that of the North Sea area, where the floor of that shallow sea emerged. The Dogger Bank became dry, and it remained dry long enough to win covering peat bogs, fragments of which have been dredged up by fishermen from depths of 40 meters. Elsewhere on this new land forests grew. Fishes now swim over the tree trunks, drowned by the last upswing of ocean level. Recently tusks of mammoths have been dredged up from the bottom of the North Sea. Across the temporary land, the Rhine

River was lengthened by about 200 miles, and it gained the drainage of the Thames River.

"Another important result of the lowering of the sea level was the conversion of wide but relatively shallow straits into dry land, with the formation of land bridges between continent and continent, and between continent and island. Thus, for many thousands of years land animals could walk, migrate between Borneo and Sumatra; between Tasmania and Australia; between Ceylon and India; between Asia and America, at Bering Strait; and between many a West Indian island and its neighbor."

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According to tests made on a level road in Iowa, an automobile must exert 36 horsepower to travel 45 miles an hour against the wind, whereas traveling with the wind only 15 horsepower was needed, and when no wind was blowing it took 24 horsepower to maintain the same speed.

GENERAL SCIENCE

Research Can Point Way To Better, Less Costly Navy

THREE HUNDRED and eighty million dollars.

That is what the government of the United States is going to spend, to bring the Navy up to the limits permitted by the treaties of Washington and London. This huge expansion of our armament afloat, advocates of the Navy bill tell us, is not intended as an aggressive gesture. Great Britain, they point out, has already built to near the maximum which we are privileged to equal if we desire; Japan has already built the last fighting ton of her quota, and her statesmen are impatiently demanding full tonnage parity so that they may build more. The new five-year naval plan is intended only to help us attain, belatedly, our own full and acknowledged rights.

Acceding to this thesis for the sake of saving argument, is it still necessary to look forward to such a terrific drain on the treasury? Can not some way be found to make our navy equal to the best in the world, able to meet any demand unexpected war may impose upon

it, and still save some part of that \$380,000,000 for use in less controverted and more immediately beneficial public works, such as schools and hospitals, better homes for the poor, roads, river improvements and farm experiment stations? Can't we manage a better bargain in warships somehow?

We can, and by the same method we manage better bargains in buying for the works of peace. We can do it by spending a fraction of a per cent. of that money for scientific research, applied directly on problems connected with the construction and operation of those same ships of war.

Battleships, cruisers, submarines, fighting planes, are all highly complex jobs in engineering, in applied physics and chemistry. Money can be saved on every one of them, from the day its keel is laid until it is outmoded and cut up into junk with oxyacetylene torches, by continuous and progressive research on better steels and other construction metals, on electrical equipment, on steam engineering and propulsion machinery, on explosives and projectiles,

THE ROMANCE OF THE ELEMENTS

an address by

Dr. H. I. Schlesinger

Professor of Chemistry,
University of Chicago

Wednesday, February 14, at 4:30 p. m., Eastern Standard Time, over Stations of the Columbia Broadcasting System. Each week a prominent scientist speaks over the Columbia System under the auspices of Science Service.