

GEOPHYSICS

Microcontinents Sought

The southern continents would fit together like a jigsaw puzzle were it not for certain missing pieces, sunken microcontinents perhaps lying in the Indian Ocean.

► **SUNKEN MICROCONTINENTS** may eventually provide the answer to the original position of the land masses on earth—if they can be found.

For years, scientists have debated the theory that the earth's continents are fragments of two former supercontinents, Laurasia and Gondwana, which broke apart and formed the modern continents that then drifted to their present positions. Laurasia combined North America, Europe and Asia, and Gondwana combined South America, Africa, Madagascar, Antarctica, Australia and India.

Dr. Robert S. Dietz, a geological oceanographer of the Environmental Science Service's Administration, U.S. Department of Commerce, said that "any reconstruction of the Gondwana supercontinent results in several Texas-sized missing pieces to this jigsaw puzzle. A large submerged microcontinental block, capped by the Seychelles Islands in the Indian Ocean, is one of these, but there must be others as well."

Dr. Dietz noted that proponents of continental drift have found inspiration in the

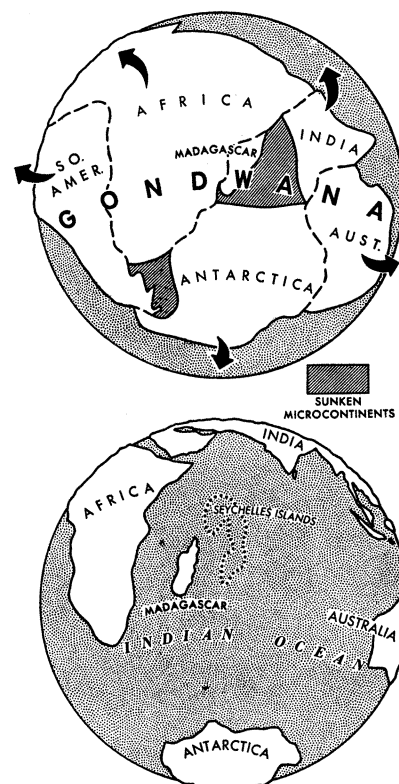
fact that the opposing outlines of Africa and South America across the South Atlantic appear to dovetail. But one prominent British scientist dismissed this keystone of drift theory on the grounds that "there is actually a misfit between Africa and South America of 15 degrees."

Dr. Dietz said this misfit arises only when comparing shorelines, which are not the true edges of continents. "The proper fit must be made along the mile-deep contour on the continental escarpment." Measurements taken indicate that the continental edges fit with a precision far beyond the expectation of even the most ardent advocates of continental drift.

Dr. Dietz asserted that the earth's continents "are literally light, tabular bodies of rock buoyantly resting in the earth's dense mantle, the part of the earth's interior which rests above the molten central core."

He said "a major effort would be required to discover and survey the microcontinents, but it would lead to the conclusive solution of one of the earth's major mysteries."

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U.S. Department of Commerce

GONDWANA THEN AND NOW?
—The earth may originally have formed two supercontinents, Laurasia and Gondwana. These may have split up and the smaller land masses drifted to their present positions. But certain necessary pieces are missing which would substantiate this jigsaw puzzle theory.

OCEANOGRAPHY

Sea Noises Upset Studies

► **THE SEA IS SO NOISY** with grunts of toadfish, cheers of octopuses, clicks of whales and rasping of lobsters that the static-like noises of oysters as they close their shells can hardly be heard.

Scientists have found that the sounds made by animals in the sea have an average noise level about 10 to 15 decibels above one microbar—roughly comparable to the hum of a busy office where typewriters are clattering, papers shuffling, telephones ringing, and people walking and talking.

The study of the not-so-silent sea was undertaken by the American Museum of Natural History, New York, for the U.S. Naval Training Device Center, Port Washington, N.Y. It is part of a detailed study to enable Naval sonar operators to tell which noises are made by sea life and which may come from unknown military ships, submarines or other craft.

The clicks, pops, burbles and whistles of numerous marine animals are often in frequency ranges that can interfere with sonar, acoustic mines and underwater listening equipment. Other sounds of the sea include those made by surface waves or deep currents, or by shipping traffic.

All these noises add up to a serious problem for scientists and engineers trying to detect and analyze underwater sounds. Another facet of the problem is that sound

travels almost five times faster in the sea than it does in air.

With the development of more precise underwater sound detecting and recording apparatus during World War II, scientists have been making thorough studies of these underwater sounds. Observations and research are compiled in the report, Review of Marine Bio-Acoustics, by Dr. William N. Tavolga, department of animal behavior at the Museum of Natural History. The report is available from the Clearinghouse, U.S. Department of Commerce, Springfield, Va. 22151, for four dollars.

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ZOOLOGY

Whale 'Suicide' Tales Believed Untrue

► **THE BELIEF THAT WHALES** commit suicide by stranding themselves is probably nothing but an old wives' tale in the view of W. H. Dawbin, a whale biologist at Sydney University in Sydney, Australia.

Reports from time to time from all over the world tell of large schools of whales becoming stranded. Many whale biologists share the popular view that whales, once stranded, will inevitably return to shore after they have been assisted to sea.

Mr. Dawbin does not believe that either the initial stranding or the so-called re-strandings are whale suicides.

In at least three known episodes, whales stranded off the New South Wales coast swam to sea again, he pointed out. "These known exceptions make you wonder whether other stranded animals would go back to the sea if given the opportunity."

A stranding at Seal Rocks, north of Newcastle, in 1962, "triggered off this line of thought." When 16 pilot whales were stranded, one was helped off and made its way to sea. However, this lone whale was by then weak or sick, and is believed later to have died and been washed up.

Another stranding escape was at Wreck Bay, near Jarvis Bay Naval Station, where 32 pilot whales flopped on shore. At the phoned request of Mr. Dawbin, local men pushed seven off and they swam to sea. One was later washed up dead. Two whales were towed to a rock shelf but they died. The other 23 were too big for the local manpower to budge before they weakened and died.

A third stranding also occurred at Seal Rocks where 15 dolphins came ashore. Six escaped from the beach unaided and worked their way back to deep sea.

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