attained. I believe it was generally stated in the papers which I read that two or three such renewals are usual before the fish concludes his flight and submerges.

Instigated by Mr. Breder, I timed several flights with a stop watch, observing from the bow of the boat, but, though I witnessed several of these transient contacts with the water, my position was not high enough to permit a very clear view of the procedure. My best chance to observe the performance clearly was on my return to the north, when flying over the Caribbean Sea in a Pan-American amphibian plane near the island of Cozumel. It was on February 19. The plane was flying nearly into a light southwest wind at about 1,000 feet above the sea. Groups of flying fish, a dozen or so at a time, kept taking off and flying directly into the wind. Presumably the plane frightened them, for in a few minutes I saw enormous numbers take to the air, almost always nearly under us. The flights usually consisted of three or four hops, separated by the brief periods of sculling described above. The over-all time of the flights varied roughly from 6 to 18 seconds; *i.e.*, the single hops lasted about 3 to 5 seconds. At least once I could clearly see the acceleration of the fish during its brief period of sculling on the surface between hops, and once I distinctly saw the undulating wake of the fish's tail, looking like a row of dots on the surface of the water.

The procedure as described seems to be well established, and is an interesting combination of the efficiency of aquatic propulsion and the low resistance attained by airfoil support.

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PROPULSIVE POWER USED BY FLYING FISH

IN my brief note in SCIENCE for January 24 under the above title, I failed to make proper mention of the excellent articles of Dr. Carl L. Hubbs in this field,[1] in which he described the repeated tail lashings by which flying fish renew their propulsive impetus in the course of a compound flight.

In his articles, however, he fails to describe the apparently intentional tail lowering by which the fish is enabled to "taxi" off for another glide without the immersion of more than the tip of the tail. One would infer that the movement is accomplished by a folding of the pelvic fins, which provide lifting power for the rear portion of the body when they are extended in the air. Such folding gives the downward tilt that dips the tail into the water.

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PRESENT STATUS OF THE "GEOLOGY OF NORTH AMERICA"

WHEN the writer undertook to bring out the "Geology of North America" to be published by Gebrüder Borntträger in Berlin, with Professor Erich Krenkel in Leipzig as general editor, it was his conviction that, owing to his lack of knowledge in many fields to be covered, it would be necessary, in order to make the work authoritative, that the principal chapters should be entrusted to recognized authorities in their respective fields. This has been done to such an extent that some thirty geologists agreed to collaborate, most of whom have responded with splendid contributions.

A few of the older collaborators, however, have found it impossible to find the time to write their chapters. The result of this has been an unfortunate delay leading to the fear that these missing chapters, about half a dozen, may not be delivered.

This fact, together with the advice received by the writer from the Regents of the University of the State of New York that, owing to his advanced age, he should restrict himself to his graptolite work and aim to finish that, made it necessary to turn the completion of the "Geology of North America" over to a younger, energetic and competent scholar. Such has been found in Professor Balk, of Mount Holyoke College, who is well known by his studies of batholiths and structural problems both in the east and west of North America.

It is hoped that younger geologists can be engaged for the lacking chapters. Meanwhile Professor Balk will begin to bring out in separate instalments the chapters already finished, after bringing them up to date, in which arduous task the writer is assisting him.

Some of the lacking chapters are of great importance, and this notice should be considered by energetic geologists as an appeal to assist in the work. So many manuscripts of great scientific value have been already received that it would mean an irreparable loss to science if the work should not be completed along the original lines.

Correspondence should be addressed: Professor Robert Balk, Mount Holyoke College, South Hadley, Mass.

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SCIENTIFIC BOOKS

HISTORY OF SCIENCE

A History of Science, Technology and Philosophy in the 16th and 17th Centuries. By A. WOLF, with the cooperation of F. DANNEMANN and A. ARMITAGE. pp. xxvii + 692, with 316 illustrations. The Macmillan Company, New York, 1935. $7.00.

A COMPREHENSIVE history of science is badly wanted. To write such a book, to trace the develop-

[1] Papers of Mich. Acad. Sci., Arts and Letters, Vol. 17, 1932; and Smithsonian Reports for 1932, pp. 333–348.