This work has been made possible by the active cooperation of Dr. D. B. Clapp, of the research laboratories of organic chemistry at this institute, who has synthesized and purified two of the three hydrocarbons used and has prepared their colloidal solutions. If extended investigations in this field justify the promise shown by these preliminary results it is planned to present a joint paper dealing with the details of preparation and microbiological test.

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DROUGHT AND THE FUNGOUS FLORA OF COLORADO

LAST summer, there appeared in this journal[1] some notes on the recovery of the fungous flora of Colorado following the drought of 1930–1934. In general, during the summer of 1935, there was an adequate amount of moisture, but the fungous flora was sparse and some species were conspicuously absent.

The summer of 1936 was likewise moist and represented the second successive season of normal precipitation following the four-year drought. However, some species of fungi that were abundant in pre-drought years of normal precipitation have not yet been found. In seasons prior to 1930, fruiting bodies of *Polyporus Schweinitzii, Trametes subrosea, Fomes roseus* and *F. nigrolimitatus* were of frequent occurrence, but during the drought these species could not be found nor have they been found since the drought was broken in 1935. Other species, as *Polyporus ursinus, P. alboluteus* and *Trametes odorata,* that were also abundant prior to 1930, were not found in 1935 but were of rare occurrence in 1936. In general, the fruiting bodies of all pore-fungi were less abundant during the summer of 1936 than in any season prior to the drought, but slightly more abundant than in the summer of 1935.

On the other hand, the gill-fungi made a good showing in 1935, and apparently reached their pre-drought abundance in 1936. Species of the genus *Cortinarius* recovered first and were abundant in 1935; other genera of agarics were either less well represented or else absent. In 1936, a more normal flora of agarics was found with species in the various genera characteristic of the pre-drought period. Then, too, the operculate cup-fungi were rare in 1935 and more abundant in 1936 than in any of the past twelve seasons. This abundance apparently can not be answered in terms of moisture relations, but possibly the preceding dry years is a factor of some consideration.

[1] SCIENCE, 84: 155, 1936.

The slowness of the reestablishment process of pore-fungi is of interest in view of the apparent rapidity of this process in some other families of fungi.

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AGAIN FLYING FISHES

THE question as to whether any fishes actually fly is always before us, and just now the weight of evidence seems to be against the idea of true flight. However, on a trip taken recently on Pacific waters largely for the purpose of observing animal adaptation and behavior, certain observations were made that may well be worth the setting forth. This is especially true, since the facts observed tend to show that there is, indeed, true flight among certain of the fishes. Here are the observations:

The course was not a trajectory, but flat.
The angle of emergence, probably 5° to 7°.
There was apparently uniform speed.
The fishes turned in their flight.
The wings seemed to flutter.
There was flight in both calm and rough weather.
There was a distinct runway in the take-off.

One of the most interesting features in connection with the flight of the fishes was the appearance of a runway in the take-off, *i.e.,* a region of disturbed water before the creature had cleared the surface. This was not like the wake of a boat, nor like the ruffled water behind an aeroplane taking off; it was rather a series of dots in two parallel rows, thus: : : : : : : and was undoubtedly made by the tips of the fluttering wings before the fish had completely cleared the surface.

When a certain height was attained in the take-off the wing tips no longer touched the water, and the smooth surface was unbroken. Moreover, the length of this runway, as it appeared on the quiet water, was such as to show that the angle of emergence was low, probably not more than five to seven degrees.

Coming out of the water at a low angle, the fishes continued on a flat line, at little distance only above the surface. So low were they indeed in their flying that some were observed to cut through waves that chanced to rise across the line of flight. Undoubtedly, the fishes flew not only on windy days but also in calm weather, too, when there could have been no possible assistance from air currents, when the water was as "smooth as glass."

After a fish had cleared the water it continued in its flight for something like ten seconds, covering a distance on the order of fifty yards. During that time a slight turn of some twenty degrees or so might be made to the left or to the right, and in each case the flight continued at what appeared to be uniform speed. Sometimes a short flight might be renewed.

One seemed to see the wings extended at an angle upward in a fluttering blur of movement. This was convincing evidence that the wings were not held rigidly at the side, as would be expected in a soaring animal.

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SOCIETIES AND MEETINGS

THE NEBRASKA ACADEMY OF SCIENCES

THE forty-seventh annual meeting of the Nebraska Academy of Sciences was held at the University of Nebraska on May 7 and 8, with headquarters at the Lincoln Hotel. The Nebraska Section of the Mathematical Association of America, the Nebraska Council of Geography Teachers, the Nebraska Science Teachers Association and the Nebraska Dietetic Association met jointly with the academy.

The first general session was held on Friday morning and consisted of an address on "Current Trends in Chemical Progress" by Dr. H. G. Deming, professor of chemistry at the University of Nebraska. The second general session followed the banquet on Friday evening and consisted of an illustrated address on "Life and Scenes along the Nile," by Dr. L. E. Melchers, head of the department of botany and plant pathology of the Kansas State College. The banquet was well attended and the past president, Dr. C. J. Shirk, professor of biology at Nebraska Wesleyan University, gave an address on "Factors in the Destiny of Man." Most of the sessions were held at the hotel, and the meeting was unusually successful. The committees responsible for the meeting are to be congratulated on their work.

One hundred and thirty papers were presented at the various sectional meetings in addition to fourteen projects presented at the junior division of the academy.

The following officers were elected: *President,* Dr. Harry R. James, Hastings College; *Vice-president,* Dr. A. L. Lugn, University of Nebraska; *Councilor for three years,* Dr. E. R. Wightman, Doane College; *Secretary,* M. P. Brunig, University of Nebraska; *Treasurer,* P. K. Slaymaker, University of Nebraska.

Announcement was made that the 1937 "grant-in-aid" awards had been made to Robert G. Coatney, of Peru, Nebraska, and to Joseph H. Robertson, of the University of Nebraska.

Chairmen of sections for the 1938 meeting will be: *Biochemistry and Nutrition,* Dr. Walter Militzer; *Biology,* Professor John M. Moulton; *Chemistry,* Dr. V. B. Fleharty; *Earth Science,* E. C. Reade; *Nebraska Council of Geography Teachers,* Dr. V. Calvon McKim; *History of Science,* Dr. T. J. Fitzpatrick; *Mathematics,* Professor R. M. McDill; *Physics,* Professor Chris Keim; *Social Science,* Professor David Dykstra; *High School,* Paul Jacobs.

M. P. BRUNIG,
Secretary

THE NEW ORLEANS ACADEMY OF SCIENCES

THE New Orleans Academy of Sciences held its eighty-fourth annual meeting at Tulane University on March 19 and 20, with a registered attendance of 193 and a gross attendance at section meetings of approximately 400, plus 200 high-school students at a demonstration lecture by Dr. Raymond Freas, of the Tulane University Department of Chemistry, under the auspices of the Junior Academy Section. Lieutenant-Colonel William F. Tompkins, U. S. district engineer in charge of flood control, 2nd New Orleans District, addressed members and their guests at the annual banquet on "Flood Control in the Lower Mississippi Valley," presenting up-to-the-minute data on the effect of the Bonnet-Carre Spillway in reducing the 1937 flood crest that had passed New Orleans a few days before.

Forty-nine papers were presented at the various sections, distributed as follows: Physics, Engineering, Mathematics, Astronomy and Geology, 11; Chemistry, Biochemistry and Chemical Education, 9; Biological Sciences, 8; Medical Sciences, 5; Social Sciences, 6; Junior Academy Section, 10.

The 1936 and 1937 grants in aid of research received from the American Association for the Advancement of Science were awarded to Dr. Herbert Parkes Riley, department of biology, Sophie Newcomb College, and Dr. Robert W. Virtue, department of biochemistry, Louisiana State University Medical Center, for work in cytology and genetics and in metabolism of sulfur compounds, respectively.

Dean Douglas S. Anderson, who retired last summer from his position as head of the College of Engineering at Tulane and as acting president of the university, was elected to honorary membership in the academy. Ten new active members were elected, and three former associates were elevated to active grade. The total membership of the academy of all classes is now 227.

Dr. Ernest Carroll Faust, of the department of tropical medicine at Tulane, was reelected president for 1937–38, and Dr. D. S. Elliott, of the department of physics at Tulane, was reelected treasurer. Dr. Harold Cummins, of the department of anatomy at Tulane, was elected vice-president, and Mr. E. L. Demmon, of the Southern Forest Experiment Station, secretary.

PHILIP C. WAKELEY,
Acting Secretary