

ulus. The predictions were always fulfilled, since the animals always turn to their right when stimulated.

In the same way *Paramecia* always turn toward the *aboral* side when stimulated. These animals have thus a definite 'motor reaction' to almost any stimulus—consisting of a dart backward and a turning toward a *structurally defined* side. The collection of the *Paramecia* in the drop of acid is due to the fact that the passage from the acid to the water acts as a stimulus to produce this 'motor reaction.' This prevents them from leaving the acid, and a dense collection is soon formed.

The collecting of *Chilomonads* in acetic acid was shown. The essential identity in character of 'positive chemotaxis' or 'positive chemotropism' with 'negative chemotaxis' or 'chemokinesis' was demonstrated by showing that whether we get the one or the other depends on the relative arrangement of the two fluids. If the *Paramecia* or *Chilomonads* were in water, and a drop of acid was introduced, a dense group was quickly formed in the acid ('positive chemotaxis'); if on the other hand the organisms are in acid and a drop of water is introduced, the latter remains quite empty. If now the organisms were in water and a drop of salt solution was introduced, the drop remained empty ('negative chemotaxis,' or 'chemokinesis'); if the organisms were in salt solution and a drop of water was introduced, they swarmed into the drop of water, as previously into the acid. Passage from the water to acid does not cause the 'motor reaction,' while passage from the acid to the water does, hence they collect in the acid; passage from the salt solution to the water does not cause the reaction, while passage from the water to the salt does, hence they collect in the drop of water.

Many other demonstrations were given, and the significance of the results in simplifying the 'psychology' of these organisms, and in their relation to current theories of tropisms or taxis was discussed. Similar results to those set forth were stated to have been obtained with certain Metazoa also.

H. S. JENNINGS,
Secretary.

DISCUSSION AND CORRESPONDENCE.

UNAUTHORIZED NEWSPAPER REPORTS.

IN view of the fact that a number of daily papers have printed reports concerning alleged or real experiments of mine I wish to state:

1. That none of the statements printed in the newspapers have been authorized by me.
2. That whatever I may have to say about my work will be published in scientific journals.

JACQUES LOEB.

UNIVERSITY OF CHICAGO.

AN APPEAL FOR ASSISTANCE.

TO THE EDITOR OF SCIENCE: A letter received from Mr. R. W. Garner, dated from Sao Thomé, West Africa, November 26, 1900, gives rather painful news of that intrepid explorer in the jungles of West Africa. Relying upon his remarkable powers of endurance and his simple habits of life, Mr. Garner started on this expedition with very limited means and an inadequate outfit. It seems that on this occasion he was overcome by the jungle fever, and the unexpected expense incurred by a month's sickness has exhausted his resources. He does not ask for help, but states that since he is already in a country where few men would care to venture, it seems as if some institution might like to send him a moderate sum of money, in return for which he would collect ethnological and zoological material, and at the same time could continue his own investigations. This is certainly a good opportunity, and any institution that can take advantage of it would at the same time be rendering assistance to a worthy explorer who is deserving of help in his undertaking. It will be necessary to secure Mr. Garner's services at once, since it is evident that if he does not receive some substantial cooperation, he cannot continue his researches. Any communication should be sent direct to Mr. R. W. Garner at Sao Thomé, West Africa.

F. W. PUTNAM.

PEABODY MUSEUM OF ARCHEOLOGY AND
ETHNOLOGY, HARVARD UNIVERSITY,
CAMBRIDGE, MASS.

CURRENT NOTES ON METEOROLOGY.

RAINFALL OF NEW SOUTH WALES.

THE 'Results of Rain, River, and Evaporation Observations made in New South Wales

during 1898,' compiled by H. C. Russell, Government Astronomer of New South Wales, show that the year 1898 is to be classed as a drought year, and was the fourth of that character to follow in succession. The average rainfall of the Colony for the year was 20.54 in., as against an average rainfall, derived from 28 years' record, of 24.85 in. The heaviest average rainfall, 64 in., is found on the Tweed river, just at the foot of a range of mountains from 4,000 to 6,000 feet high, against which the trade winds blow. A hopeful view is taken by Mr. Russell regarding the possibility of long range weather forecasts in New South Wales. "I am fully convinced," he says, "that a complete record of the rainfall will enable us to forecast the seasons with some show of success, provided, of course, that the extended knowledge of our rainfall is concurrent with a careful study of Australian and tropical weather, which is now in progress. * * * Further study will, there is reason to expect, explain the reason for dry years and when to expect them."

RAINFALL AND ALTITUDE IN ENGLAND.

THE *Quarterly Journal* of the Royal Meteorological Society, for October, contains a paper by Marriott on 'Rainfall in the West and East of England in Relation to Altitude above Sea-Level,' in which the mean annual and monthly rainfalls at the English and Welsh stations are discussed for the ten-year period 1881-1890. The stations are classed as 'eastern' and 'western,' the former being those that drain to the east and the latter those that drain to the west. A further classification was made according to altitude, the stations being grouped together for each 50 ft. up to 500 ft., and above that altitude for each 100 ft. The increase of rainfall with altitude may be compactly summarized as follows:

100 feet + 9 per cent.	600 feet + 5 per cent.
200 " + 3 "	700 " + 38 "
300 " + 3 "	800 " + 3 "
400 " + 14 "	900 " + 4 "
500 " + 1 "	1000 " - 21 "

A NEW METEOROLOGY.

A NEW 'popular' presentation of the essential portions of meteorology, within the compass

of a small octavo volume of 123 pages, at a cost of 80 Pfennige (20 cents) comes in a recent mail from Germany. This little book is by Paul Kaegbein; is entitled 'Meteorologie'; appears in the *Wissenschaftliche Volksbibliothek*; is published by Schnurpfeil, of Leipzig, and can really be recommended as giving a good general view of the subject with which it deals. The price is certainly low for the amount of information contained in the book. One of the chief objections to the book is the fact that the author has drawn largely on some of the standard works on meteorology, such as Hann's *Handbuch der Klimatologie*; Abercromby's *Weather*, etc., without acknowledging his indebtedness to the writers from whom he obtained his material.

ATLAS OF THE INDIAN OCEAN.

THE Royal Meteorological Institute of the Netherlands has recently issued a meteorological atlas of the Indian Ocean for the month of June, July and August. The two preceding volumes for the months of December, January and February, and March, April and May, respectively, preceded the present volume by seven years. The charts contained in the third part of this important publication are stated in the preface to have been ready in September, 1899. There are in all twenty-two charts, showing surface temperatures of the ocean water; ocean currents (velocity and direction); pressure; air temperature; winds (by means of wind roses); rainfall (in percentages); the distribution of thunder, fog, hail, cloudiness; the average limits of whales, flying fish, etc.; the sailing routes; percentages of storm frequency, and the trajectories of cyclones.

R. DEC. WARD.

THE INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE.*

At the International Conference which met in London last June to discuss this subject, it was thought that the time had arrived when the great work of publishing a complete catalogue of all the scientific literature of the world might be undertaken with every prospect of success.

A Provisional International Committee was, therefore, appointed at the Conference to carry

*From *Nature*.