Malay Peninsula. The following extract describing the flashing in unison of fireflies will be of interest to those who have studied the subject:

One evening I saw a demonstration of insect organization which I believe it is impossible to explain. It was a beautiful night. The air was full of extraordinary fireflies. About every fifteen minutes these flies separated into two armies, one settling on the trees growing on the left bank of the river and the other on the right. Then, when I had decided that the fireflies had gone to bed for the night, the whole army on the left bank gave one big flash in perfect unison, which was immediately answered by another big flash from the right. How those flies managed to keep time absolutely beats me, but they did so, though there must have been thousands of them stretching along the river-banks for a hundred yards or more. The illumination was so strong that the branches of the trees could be seen quite distinctly.

EDWARD S. MORSE

THE PROBLEM OF THE MONKEY AND THE WEIGHT

THE following simple, interesting and instructive problem in mechanics, though old, is still of interest as different answers are given by those whose opinions are to be respected and who ought to agree.

A supposedly weightless rope passing over a frictionless pulley has a 10 lb. weight hanging on one end and a 10 lb. monkey on the other. What will happen when the monkey climbs up the rope.

We are told that the correct answer is that the weight will move up as fast as the monkey and that they will ultimately meet at the top. The monkey, therefore, does twice the work of lifting himself to that height. This is said to have been crudely confirmed by a boy who found it far more difficult to pull himself up in such a case than when the top of the rope was immovably secured.

It seems necessary to distinguish between a jerky and a uniform movement of the monkey; the former involves acceleration, deceleration and inertia. It is claimed that with a uniform motion the weight would not move, as the monkey can not pull with a greater force than his weight. And that with a jerky upward motion of the monkey, involving acceleration and deceleration, the weight would move up and down for each jerk, but its average and ultimate position would remain the same. Others claim that the weight would move up with every jerk, but would not descend again during the deceleration, hence its ultimate upward motion would be equal to that of the monkey. A spring or elastic rope introduces another complication.

For a uniform motion the problem may be put in a simpler form. Suppose a motor suspended on a rope moves itself up or down fast but at a uniform velocity, by winding or unwinding the rope around its shaft. Will the tension on the rope then be greater or less respectively than that when the motor is at rest?

The problem is not without practical value.

CARL HERING

PHILADELPHIA, OCTOBER 16, 1923

THE PROFESSOR AND HIS WAGES

The Professor, God bless him, he works long and hard,
And diplomas and medals are his sole reward.
On "Love of his work" he must feed his dear own,
With a pleasant smile and never a groan.

He must move in society; live with the best;
He must be very careful of how he is dressed;
He must buy many books and must study at night;
Everything that he does must be proper and right.

He must never have children, it's vulgar and bad,
And besides, who would feed them, supposing he had?
He must not smoke a pipe, for that wouldn't be nice,
And he can't smoke cigars, for he hasn't the price.

To the theater he is permitted to go,
But he rarely does so for it takes too much dough.
He must always be cheerful before every class,
Though bills through his mind ever, endlessly pass.

And while he is teaching, his dear wife must scrub;
She must manage her part with a mop and a tub;
But she has her own pleasures as well as does he,
They are solely the Women's Club's afternoon tea.

These things are quite bad, you in truth will concede,
But to make matters worse, he in SCIENCE must read
That he's paid all he's worth and should be quite content
With a pittance that scarcely pays for his rent.

The Professor, God bless him, I take off my hat
To a man who has courage to face all of that.
Nothing short of a genius could ever pull through
And accomplish what he is required to do.

ANON

CORRECTIONS

THE article entitled "Gels and Theory of Adsorption" given in the December fourteenth issue of SCIENCE reads on page 496 as follows:

$pH < 1.217$ $pH > 1.217$

but should read:

$pH > 1.217$ $pH < 1.217$

NEIL E. GORDON

In SCIENCE, 1924, p. 10, first column, line 2 up, for "eighteen" read "thirty-one."

F. CAJORI

SCIENTIFIC BOOKS

THE WEBER SEVENTY-YEAR BOOK

A "FEEST-NUMMER" of the "Bijdragen tot de Dierkunde" in an edition de luxe has been lately issued by the Royal Zoological Society, "Natura Artis Magis-

tra," of Amsterdam. This imposing volume celebrates the seventieth birthday of Dr. Max Weber, senior professor of zoology in the University of Amsterdam.

This tireless and capable investigator, of whom an excellent portrait is given, has devoted himself for many years to the study of the fauna of New Guinea and neighboring parts of the Pacific. He has interested himself particularly in the fish-fauna, transitional between the tropical "South Seas" and the continental fauna of Australia. His work has been throughout of a high order. Beginning in 1895, with the fishes of Semon's voyage to New Guinea, he has continued in active research to the present time. Twenty-eight new genera, all of them apparently valid, have been described by him, with the cooperation, in part, of his able associate, Dr. Louis F. de Beaufort. The majority of these new forms were taken in the Siboga expedition, about 1913.

In this memorial volume, 44 authors are represented. The list includes most of the naturalists of the Netherlands, several from Germany and Scandinavia, one (Dollo) from Belgium, two (Regan and Hickson) from England, one (Annandale) from India, and three (Eigenmann, A. H. Clarke and Jordan) from the United States. The essays are extremely varied and those within the comprehension of the present writer, important and interesting.

DAVID STARR JORDAN

Nutrition, The Chemistry of Life. By LAFAYETTE B. MENDEL, Sterling Professor of Physiological Chemistry, Yale University. The Yale University Press, 1923.

THE book, which contains 150 pages, represents the Hitchcock Lectures delivered by the author at the University of California in 1923. It is stated in the preface that no attempt has been made to present an elaborate summary of the current knowledge of the subject. Indeed, it would have been impossible to do so in the compass of a book of this size.

The book is divided into five chapters: The science of nutrition: a retrospect. The importance of "Little Things" in nutrition, The vitamines, The protein factor in nutrition, and The energy problem in nutrition.

There is an individuality possessed by this little book which makes it very different from any other which has yet appeared on the subject. In the first chapter the views of Magendie, Beaumont, Prout, Liebig, Mulder and Voit on nutrition are set forth in a most entertaining way.

In subsequent chapters a wise selection is made of material from the great volume of experimental data now available for presentation to a popular audience. The story of modern research is told simply and embellished with illustrations which make an appeal to a wide circle of readers. Dr. Mendel's extraordinary ability as a lecturer and teacher is reflected in this series of lectures.

E. V. MCCOLLUM

LABORATORY APPARATUS AND METHODS

A CONVENTIONAL SCHEME FOR TEACHING CELL DIVISION (MITOSIS)

So far as I am aware all the conventional schemes for teaching mitosis are defective in at least four points: (1) They do not emphasize the cyclic nature of the phenomenon. (2) Certain phases are too long and too much involved. (3) The processes are not clear cut. (4) Certain steps that normally occur at least in some forms are omitted. For fear that any one may think that my criticisms are too severe, let us examine each in detail.

All schemes of cell division stop with the end of the telophase with the implication that these two cells transform into the prophase, but so far as I know they do not emphasize that the telophase is but the beginning of the prophase. Apparently this is of no importance, but really I believe that it has considerable pedagogic significance. In the usual scheme of mitosis the term prophase is used to cover the process from the resting nucleus until the chromosomes have arranged themselves in the equatorial plate. This involves the changes from granules to a spireme, from a spireme to chromosomes, and then the arrangement of the chromosomes into an equatorial plate, three rather distinct steps. Contrast this with the metaphase and anaphase as usually described which involves merely the splitting and separation of the chromosomes, a process of great biological significance, but involving no very difficult mechanical principles. Then too the telophase is usually described as a reconstruction stage with no or only very vague indications of how the process of reconstruction is brought about. Primarily or biologically these points may be of no great interest but pedagogically I believe that they are of more importance than is usually assumed. Any schematic arrangement it seems to me ought to be clear cut, even to the point of being dogmatic. There is always time later to point out the exceptions and deviations but once a fundamental clear cut scheme is presented it can be used as a foundation to work on. As indicated above it has seemed to me that the processes taking place in the telophase never have been elaborated sufficiently.

With these points in mind and finding myself face to face with the problem of teaching cell division to a large class in general embryology several years ago, I designed a chart which I have been using ever since. This chart seems to be so helpful in getting students to understand the complicated process of cell division