

themselves some points of beauty, or are of curious shapes; may know them only by their common or local names, or may take up the subject in a purely scientific spirit, identifying a plant during its flowering stage and finally collecting its seeds when mature, labelling them with both common and scientific names, date of flowering and seedling, and laying away to form a part of what in time may grow to be a collection of real value.

One great objection that may be raised is undoubtedly the difficulty in correctly identifying seeds. There are indeed comparatively few botanists who claim to be able to identify more than a small proportion of the plants they may know, by the seed alone. But this fact only emphasizes the desirability of undertaking just this line of work, and but serves to illustrate the well-known fact that work of real merit may not infrequently be done by the amateur who merely seeks recreation.

GEORGE P. MERRILL.

Washington, Sept. 13, 1893.

#### SCIENCE IN THE SCHOOLS.

In a recent article, that well-known scientist, Dr. Groff of Pennsylvania, stated that "it has long been the dream of scientists that the time would come when the elements of natural history and of the physical sciences would be taught in secondary and primary schools." The college professor would, indeed, welcome a greater familiarity on the part of students entering their departments, with the elements of the sciences; but just where this training should begin is not so clear. There is an organized effort being made in some of our leading educational cities to establish this work in not only the secondary schools, but in grammar and primary grades as well. While science should receive a large share of attention in the high schools, and presumably in the grammar grades, is it not going just a little too far to force such work into the primary grades? It would certainly appear that, with all the modern innovations already introduced into the primary rooms, sufficient diversion is secured, and certainly, for pure "busy work" the ideal seems to have been reached. Then why crowd these little minds with this additional load, unless it is really superior as a means of

education to those studies that are generally acknowledged so essential as a foundation for subsequent work? Again, I submit that in this early formative period, teaching and encouraging children to capture beautiful butterflies, moths, crickets, or, in fact, any other insects, with the purpose of killing them and picking them to pieces, is not inspiring a regard for God's creatures about them, which sentiment should be instilled into these little people rather than crushed out of existence.

But I think that most agree that *somewhere* in the grammar grades the elements of natural history should be imparted. Such, however, is the present crowded condition of the curriculum of our grammar schools that but little, very little, time can be found for it. Nor, indeed, would it be desirable to take much of the pupil's time for such work, in view of the fact that so many studies of more practical importance in life are taught, and rightly, too, in these grades. In our public grammar schools many boys and girls are kept along from year to year at great sacrifices on the part of parents, and they should be allowed to devote their time to such studies as they will most need. It would, therefore, be manifestly unfair to attempt more than the most rudimentary science work in those grades below the high school.

HENRY EDGERTON CHAPIN.

Ohio University, Athens, O.

#### THE IKONOMATIC METHOD.

It is strange how difficult it seems for some writers to understand this early, simple and widespread method of recording sounds.

Dr. Thomas in *Science*, Sept. 8, presents a singular instance of this, when commenting on my explanation of the use of the turtle-sign in the glyph for the Maya month-name Kayab. He says: "A compound of *ak* and *yab* cannot be a derivative of *kay*." Of course not! The nature of the ikonomatic theory forbids it; for this has reference not at all to derivation, but to other word or words with solely homophonic, and not etymologic, affinities.

When there are so many examples of ikonomatic hiero-

### FOSSIL RESINS.

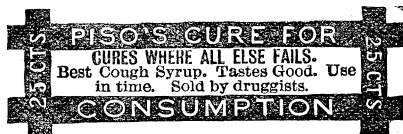
This book is the result of an attempt to collect the scattered notices of fossil resins, exclusive of those on amber. The work is of interest also on account of descriptions given of the insects found embedded in these long-preserved exudations from early vegetation.

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glyphs presented in a work so accessible and recent as Dr. Antonio Penafiel's "Nombres Geograficos de Mexico ; Estudio Jeroglifico," it is scarcely excusable for those who study American archæology either to overlook or to misunderstand this system of writing.

D. G. BRINTON.

Media, Pa., Sept. 19.

## A CURIOUS EAR OF INDIAN CORN.

A CURIOUS freak of nature was recently discovered in a garden in this city. A stalk of maize or Indian corn failed to develop any ears at the regular places in the axils of the leaves, but instead a single spike of pistillate flowers (an ear) appeared at the end of the central pedicel of the tassel. This ear was about three inches in length, and apparently well formed, except that it lacked glumes. So being exposed to the sun its color was light green. The styles were perfectly developed, and six inches to a foot in length. The places of a few of the grains were occupied by staminate flowers.

Unfortunately this ear was not allowed to grow, and I am unable to say whether it would have developed any perfect grains or not.

Is it a reversion to some ancient form, or only an accidental variation?

O. H. HERSHEY.

Freeport, Ill.

## A MOUSE DESTROYING ITS YOUNG.

I ONCE had an opportunity of studying a mouse in a cage with a revolving wheel which it was fond of turning, as squirrels are larger but similar wheels. This cage had an apartment over the wheel in which it built a nest from

cotton furnished to it. It gave birth to three young mice in the lower apartment, and after a little while removed them to the nest above. One of these young fell out of the nest to the space below. The mother carefully carried it back again. It fell out a second time and was once more replaced. It fell out a third time. The mother then seized it as if angry and unwilling to waste her energies on so troublesome an offspring, and devoured it with no more feeling than if it had been a bit of cheese.

M. L. HOLBROOK.

## GENEALOGICAL TABLE OF PLANTS.

COULD you or any of the readers of *Science* inform me through your columns where I can find a printed list or table showing the supposed relationships of the commonest genera of plants under the theory of evolution? In other words, I should wish to find a genealogical table of plants from the earliest times to the present day. Has any such work been attempted?

THOMAS MARWICK.

New York, Sept. 21, 1893.

## NUMBER-FORMS.

NUMBER-FORMS, such as described by Mr. Martin and Mr. Talcott Williams in recent issues of *Science*, were first brought to notice by Mr. Francis Galton in *Nature*, Jan. 15, 1880. In his "Inquiries into Human Faculty" (Macmillan, 1883) there are illustrations of more than fifty varieties of number-forms. A still larger number is given in a recent book by Flournoy (*Des Phénomènes de Synopsie*, Alcan., 1893).

J. MCKEEN CATTRELL

Columbia College, N. Y., Sept. 19.

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"The Conchologist: a Journal of Malacology," Vols. 1 and 2, with wood cuts and plates, value 12/- will exchange for any works or pamphlets on American Slugs or Anatomy of American Fishes. W. B. Collinge, Mason College, Birmingham, England.

I wish to exchange a New Model Hall Typewriter, price \$30, for a Daylight Kodak, 4x5 preferred. George A. Coleman, Dep't. Agric., Div. of Ornithology, Washington, D. C.

Exchange—The undersigned is desirous of obtaining correspondents interested in macro-lipoptera, in Alaska, the far Western, Southwestern and Southern States. Will also exchange rare lepidoptera for entomological literature. Levi W. Mengel, Reading, Penn.

Wanted to exchange—Medical books, Obstetrical Transactions, London, Works of Sir J. Y. Simpson, Beck's Medical Jurisprudence. Handbook for the Physiological Laboratory, by Burnton, Foster, Klein and Sanderson, Quain's Anatomy, and about fifty others. Catalogues given. Want Geological, Botanical and Microscopical books in exchange. Dr. A. M. Edwards, 11 Washington St., Newark, N. J.

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