

as the typical camptonite in the Pemigewasset Valley, N. H.

By diligent investigation it was my good fortune last August to discover in the locality of these ramifying dikes and the famous Corinth copper mines an extraordinary dike of limburgite, from 6 to 10 feet in width, and penetrating the calciferous mica schist toward the west for more than half a mile.

This limburgite bears individual crystals of olivine two to three inches in length and one to two inches in breadth. A single specimen has been placed in the museum of Dartmouth College containing a crystal of olivine two and one-half inches by one and three-fourths.

Some of the smaller crystals by the oxidation of the iron have become converted into limonite or hematite; others have gone over into serpentine, while a bit of calcite derived from the contiguous orthorhombic pyroxene or the basic plagioclase feldspar is occasionally seen in the cavities once filled by the original olivine crystals.

As the locality is to the northward in the exact direction of the moving ice, and at a distance of only about twenty miles from the famous Thetford boulders, it seems evident that Corinth, Vt., was their original habitat.

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MORE DICTIONARY ZOOLOGY.

SOME time ago I called attention in your columns to the inaccurate zoological information given by a recently published dictionary. I have just had occasion to examine the *Encyclopædic Dictionary* (Philadelphia, 1896) and should like to ask how the editors explain the following eccentricities:

- (1.) *Snail*. "*H. aspera* is also eaten." *Helix aspersa* is the snail intended; *H. aspera* is a totally different snail, found in the West Indies.
- (2.) *Slug*. "*A. agrestis*, the Red Slug." There is no *Arion agrestis*. The article, with its errors, appears to have been taken (without acknowledgments) from an old edition of *Chambers' Encyclopædia*. If the editors had examined the recent edition of that standard work, published several years before 1896, they would have found a different account.

- (3.) *Coccus*. The species assigned to *Coccus* belong to seven perfectly distinct genera; and no author in the last twenty-five years who has given any study to these insects has used the last century classification of the *Encyclopædic Dictionary*.

The editors of dictionaries will have to realize that if their zoological definitions and articles are to be accurate and up-to-date they must employ specialists to write or revise them. Until they do so, zoologists should make it their business to call attention to the misrepresentation of their science in works which the public is asked to receive as models of accuracy.

T. D. A. COCKERELL.

SEPTEMBER 25, 1897.

LANTERN TRANSPARENCIES.

TO THE EDITOR OF SCIENCE: Those who have occasion to have copies of engravings or pictures of any kind made for use with the lantern may be glad to know that such may be printed from the plates used in ordinary printing if sheets of thin transparent celluloid be taken. Gelatin also may be used. The latter is liable to roll up more or less and needs to be protected by inclosing between glass plates of the ordinary size for lantern slides. Celluloid will not trouble so much in that way, yet it is best to mount such pictures in the same way. Photographic half-tones show very well indeed, the fine meshing not being enough magnified nor dense enough to be noticed upon the screen at the distance of a few feet. Such copies need cost but a few cents apiece if the electro can be got to print from, and if celluloid be used without the glass cover perhaps one cent would be the full cost. I enclose a couple of samples that you may judge of the quality of such pictures.

A. E. DOLBEAR.

DANGERS OF FORMALIN.

TO THE EDITOR OF SCIENCE: Now that the use of formalin for preserving objects for dissection is becoming so common, I think a word of warning as to the danger involved in the use of even attenuated solutions should be given. It is doubtless a matter for the medical faculty to

explain and limit, but as no one has spoken from their ranks a word from a layman may be of service.

The handling of objects which have been preserved in a 4 % solution kills the outer cuticle and appears to have a paralyzing effect on the sub-cuticular nerve terminations. Repeated use demoralizes the skin very badly. The vapor or minute drops arising in dissection from the objects manipulated is liable to cause serious affections of the eye. We have just heard from a recent collaborator of the museum who has narrowly escaped the loss of one eye, and is probably condemned for life to the use of glasses as a result of dissections of slugs preserved in formalin. Irritation of the mucous membrane of the air passages has probably been observed by every one who has used this preservative.

WM. H. DALL.

U. S. NATIONAL MUSEUM,

WASHINGTON, D. C., October 12, 1897.

SCIENTIFIC LITERATURE.

Hallucinations and Illusions. A Study of the Fallacies of Perception. By EDMUND PARISH. London, Walter Scott; New York, Charles Scribner's Sons, 1897. Pp. 390. Contemporary Science Series, Vol. XXXI.

The present volume is a rewriting, by the author, of his German monograph, published about three years ago; and this in turn grew out of his examination, for the Munich Psychological Association, of the cases collected in Germany for the 'International census of Waking Hallucinations in the Sane'—a project initiated and vigorously promoted by the English Society for Psychical Research. While there is an extensive literature on some one or another of the many ramifications of the general subject of illusions—particularly contributions of cases illustrative of certain special kinds or causes of illusion—there is a conspicuous lack of more comprehensive and systematic treatises covering the general field, both descriptively and with the purpose of presenting these various forms of fallacious perception from some unifying theory or principle.

It can hardly be said that the author has succeeded in filling this gap, although the road

which he set out to survey has been covered with accuracy and originality. Comparison is at once suggested with the older volume of Sully on 'Illusions,' which, though far less scientifically thorough and necessarily lacking in the explanations and conceptions that have grown out of recent research, is none the less more comprehensive in scope and more philosophical as well as attractive in treatment. The general reader will still find more enlightenment as to the nature of illusions in the work of Sully than in that of Parish, although he can find no abler treatment of certain phases of this study than the latter work offers. To begin with, Dr. Parish's definition of his topic rules out the consideration of that interesting group of normal deceptions of the senses—commonly known as optical illusions and the like—which are so significant for the study of sense-interpretation and perception. Indeed, instead of conceiving an illusion as any form of psychological process which happens to be erroneous he aims to establish a type of perception, at times normal and at times abnormal, as the basis of all hallucinations and illusions. This underlying principle is found to be that of dissociation, "a state in which, indeed, generally speaking, the consciousness is normal, but where the association-paths of a more or less complicated system of elements are wholly or partially blocked." Hallucinations and illusions "are just as much sensory perceptions as the so-called 'objective' perceptions." The dream state is an extreme state of dissociation, and as such hallucinations and illusions become the stuff that dreams are made of; in insanity and nervous fatigue; in moments of emotional excitement as well as of rapt attention; under the influence of drugs and particularly in hypnotic states, the conditions are favorable for that distortion and inhibition of the normal association-paths which Dr. Parish holds to be the starting point of fallacious perception.

This conception has much in its favor; it makes it natural to find a considerable number of hallucinations among the sane and in the waking state; it certainly binds together the various forms of semi-abnormal and morbid conditions under which illusions most commonly occur; it is equally adaptable to the explana-