Sense of Direction in Animals.

HAVING noticed the recent articles in *Science* on this subject, I wish to add an item that may be to the point

When living near Neosho Falls, Kansas, a neighbor, who was a market bird-hunter, went from there to western Missouri for the purpose of hunting quails and prairie-chickens in the fall of the year. He took with him a favorite pointer dog. The route taken was southward some fifty miles to Parsons, Kansas, by railroad thence north-eastward to Fort Scott, and on into Missouri nearly due east from the latter point. All went very well for a few days after he began hunting, but by some means the dog became lost from him. He spent two days hunting it, and as it was no use to try to hunt without the dog he went home, and there found the dog all right. According to the report of his family, the dog had reached there within two days from the time he lost him, and, as the distance was more than 75 miles, it is quite certain that the dog took a near cut for home. Now if this dog had no sense of direction, what had he that led him to take what we may confidently believe to be the straight and true course for home when he had passed over the other two sides of the triangle by rail?

Who does not know that a cat, or even a half-grown kitten, taken a long way from home in a bag nearly always finds its way back? When living in northern Michigan I had a cat we were tired of. I took her in a boat directly across the lake about two miles and turned her loose. Although it was about six miles around the end of the lake, a circuitous course, and certainly one unknown to her by sight, the next morning she was back at the old place. Another case is just stated to me of a cat that was taken by rail fully twenty miles in south-west Missouri, and the next day he walked in all right at his former home.

H. E. VAN DEMAN.

Washington, D.C.

A Lamentable Case.

PERHAPS another case like the one here recorded will never appear in your columns. At least we may hope so. The person referred to, and whose name will not be mentioned, from the respect in which I held him, was a true lover of nature and an observer. I first knew him, over a score of years since, when to my boyish view he presented the prime features of a country naturalist's existence. He was a poor man and not well educated, but he was a lover of my pursuits, and he read excellent books.

Long years after, and upon returning from a residence in another quarter, I inquired about my nature-loving friend, and found that he was cared for at the County House. I went to call upon him and found that he was dead. One line in the poor-house register was all I could find concerning the blameless man, for the present proprietor came after he was gone and knew nothing of him. There it was: ——— ———, aged — years, died ———.

In my fancy I compared him to Thoreau, and he undoubtedly had similar thoughts and feelings.

> How lov'd, how honour'd once, avails thee not,
> To whom related, or by whom begot;
> A heap of dust alone remains of thee;
> 'Tis all thou art, and all the proud shall be!

M. G.

Flight of Archippus.

ON the morning of October 22, between eight and nine o'clock, I witnessed the largest flight of *Danais archippus* I have ever seen, and the only one I have observed in Texas. The morning was cloudy with little or no breeze. The direction of the flight was southward. The butterflies were not in such close masses as I have seen them previously, and were flying at various elevations from twenty feet to as great a height as the eye could reach. I counted one hundred passing a given line in less than one minute. After watching them for some time I drove across the line of flight a quarter, or perhaps one-third, of a mile and then northward with the line of flight for more than a mile. Over the whole distance the butterflies were fully as numerous as when I first saw them.

E. T. DUMBLE.

Austin, Tex., Nov. 1.

Codling-Moth Statistics from Oregon.

THE following points have been determined here this season, and may be of interest to the entomological readers of *Science*. Average life of moth, 10–15 days; egg-laping taking place during the latter part of that time. Time required for incubation, 4–10 days; length of life of larva in apple, 4 weeks (about); time passed in cocoon before emergence of moth, 23 days.

This tallies very closely with Riley's observations made a number of years ago in the East; but he makes the life in the cocoon considerably longer.

The first moths were observed here May 16, and the last egg noted, apparently fresh, on a pear September 19. The moth is at least four-brooded in Oregon.

F. L. WASHBURN.

State Experiment Station, Corvallis, Ore., Oct. 25.

Action of Electric-Light on Plants.

IN various reports of the effects of electric-light upon the growth of plants I have noticed nothing upon the, to me, interesting question of whether the effect of electric-light is to keep open at night flowers like the lily and evening primrose, which ordinarily close at departure of daylight. If this point has been discussed, can you kindly give me reference to such discussion?

C. H. AMES.

Boston, Mass., Nov. 8.

Chemical Nomenclature.

WOULD you kindly correct an error which inadvertently crept into my article on the "Spelling and Pronunciation of Chemical Terms" in the current issue? On page 273, column 1, line 16 from the top, instead of "by an American chemist" read "from a North American mineral."

T. H. NORTON.

Cincinnati, Nov. 12.

The Humming-Bird's Food.

DOCTOR MORRIS GIBBS'S article recalls an observation which suggests that the humming-bird may find, in spring, an important supply of food in the sap of certain trees — particularly before flowers are abundant. In the case observed it was taking the sap of *Quercus rubra*. Other trees would furnish a more agreeable repast, doubtless.

H. L. BRUNER.

BOOK-REVIEWS.

Manners and Monuments of Prehistoric Peoples. By the MARQUIS DE NADAILLAC. Translated by NANCY BELL. Illustrated. 412 p. New York, G. P. Putnam's Sons. $3.

The author of this work is already favorably known in this country by his excellent "Prehistoric America," and in France he ranks among the most active and respected of the students of prehistory. In this volume he endeavors to present a faithful and vivid portraiture of the life of man during the Stone Age, especially in Europe, though by no means confined to that continent. He does not undertake to assign a definite length to this phase of civilization, recognizing that it is not so much a period of duration as a stage in culture. He concedes, however, that it was in ancient Europe of great length, "countless centuries."

During the greater part of it man depended upon hunting, fishing, and the natural products. But even then his arts had begun. He made weapons and tools, he used clothing, pleased himself with ornaments, was acquainted with fire, dug canoes from trees, and at times produced creditable artistic sculptures and drawings. The origin and growth of these arts are illustrated by numerous examples drawn from a surprisingly wide familiarity with the literature of the branch.

An interesting chapter is devoted to the kitchen-middens, caves, pile-dwellings, and stone buildings, which served to protect the ancient natives. He describes the magalithic monuments, such as the dolmens, menhirs, and cromlechs, which have excited so much discussion, but declines to assign them to any known people. Yet if, as he intimates, many of those in France were constructed during the Bronze Age, it is difficult to avoid the conclusion that they were by the peoples whom Cæsar mentions as living there at the time of his conquest of Gaul.

The industry, commerce, and social organization of men in the Stone Age are inferred from a variety of evidence, and form the subject of an interesting chapter. The care which they evidently took of the wounded reflects favorably both on their kindness and skill. A chapter on fortifications concludes with an excellent summary of Dr. Schliemann's investigations on the site of ancient Troy.

In handling such a mass of material a few errors naturally creep in. It is not correct to say (p. 21) that "the mounds of North America contain none but copper implements and ornaments," as ornaments of gold, silver, and meteoric iron are not unfrequent. So (on p. 76) the writer says that the ancient canoes "must have been worked by means of oars," and seems surprised too at the absence of rowlocks. Of course, paddles, not oars, were the means of propulsion. It is difficult to perceive what he means by this extraordinary passage on p. 219 — "The most ancient settlements of Malabar contain iron tridents, and Genesius (*sic*) dates their use from before the deluge. It is, therefore, surprising to find that some races remained for an illimitable time ignorant of the way to procure a metal of such great utility." This sounds like eighteenth century science. But these are slight blemishes on a book of singular merit in its composition and unusually beautifully printed and illustrated.

Alaskana, or Alaska in Descriptive and Legendary Poems. By BUSHROD W. JAMES. 368 p. Illustrated. Philadelphia, Porter & Coates.

IF Professor James had not had the unfortunate idea that he is a poet, he would have written a book of considerable interest, as he has visited various localities in Alaska and has read several works about that country. As it is, he gives us 360 solid pages of verses in the meter of "Hiawatha," with "some slight improvements," as the announcement of the publishers modestly puts it, describing the natives, the scenery, the seals, the sunsets, and the stories, which he has by the above means found out about.

It would be unfair not to supply a sample of his poetry, which we select at random from his canto or fytte on the Alaskan native tribes: —

> The Orarians take precedence,
> Classed as Esquimaux or Innuits,
> Dark Creoles, and sturdy Aleuts —
> These hold close along the sea-board,
> Claiming nearly all the coast-line
> And the islands near adjoining; —
> Save where here and there the Indians
> Have and hold small coast possessions
> Which they won by force or cunning.

Really, was it worth while to put capital letters at the head of these lines? And are there people who will read 360 pages of such? If so, human nature has certain qualities of patience or kindliness for which we did not give it sufficient credit.

There are a number of photogravures in the volume, very nicely done, and, as far as type and paper go, it is a creditable specimen of the publisher's taste, and looks as if it was intended to be a "Holiday book."

Experiments Arranged for Students in General Chemistry. By EDGAR F. SMITH and HARRY F. KELLAR. Philadelphia, T. Blakiston, Son & Co. 8°. 57 p., with alternate leaves blank for notes.

THIS series of exercises, based on the authors' experience with their own classes, is intended to accompany any convenient textbook of inorganic chemistry; but reference is made to that of Richter. Beginning with fundamental operations (as with blowpipe, glass tubing, balance, and graduates) and general principles (as the difference between chemical and physical change) the course proceeds to the study of hydrogen and other non-metals in Part I., followed by the metals in Part II. Quantitative relations are well presented in the experimental work and stoichiometrical

CALENDAR OF SOCIETIES.

Philosophical Society, Washington.

Nov. 12.—J. P. Iddings, Geology of the Crazy Mountains; H. W. Turner, Lavas of Mount Ingalls; W. H. Dall, Dates of Publication of Conrad's Monographs of Tertiary Fossils.

Anthropological Society, Washington.

Nov. 15.—Warren K. Moorehead, Xenia, O., Singular Copper Objects from Ancient Mounds in Ohio; James Mooney, Lester F. Ward, W. H. Holmes, W. Hallet Phillips, W. H. Babcock, and Frank Baker, Geographic Nomenclature of the District and Vicinity, a Symposium.

Society of Natural History, Boston.

Nov. 16.—Warren Upham, The Origin of Drumlins; Professors Shaler and Davis, On the Origin of Drumlins.

THE Civil Service Commission will hold examinations on Nov. 29 to fill two vacancies in the Quartermaster-General's Office, one in the position of assistant civil engineer, at a salary of $1,200, the other in the position of architectural draftsman, at a salary of $1,400. An application blank and information as to the subjects of the examination may be obtained of the U. S. Civil Service Commission, Washington, D.C.

Exchanges

[Free of charge to all, if of satisfactory character. Address N. D. C. Hodges, 874 Broadway, New York.]

For exchange. — Fine specimens of Wis. fresh-water pearls. I want books or papers on marine and fresh-water algæ; also classified specimens of same. I will exchange for Smithsonian reports or crystallized minerals. D. M. ANDREWS, Dodge Centre, Minn.

For Sale or Exchange.—The undersigned has a lot of first-class duplicate bird's skins and sets of eggs, both rare and common, for sale or acceptable exchange. Also about two hundred second class skins and five hundred eggs, suitable for study specimens, at very low figures. The latter, for starting a collection, are as good as the best, embracing all classes and nearly all families. Also about forty species of fossils, principally Devonian. MORRIS GIBBS, M.D., Kalamazoo, Mich.

For Exchange—"The Birds of Kansas,"—Goss, for Gray's Anatomy, or Medical Dictionary. Must be in good condition. Address, J. H. SIMPSON, Buchtel College, Akron, Ohio.

For Sale or Exchange.—The subscriber would like to receive cash offers, or an offer in exchange for the earlier volumes of Poggendorf's Annalen and the later volumes of Silliman's Journal, upon the following list: Chenn —Manuel de Conchyliologie. 2 vols. Nearly 5,000 figures, some hand-colored. Paper. Paris, 1859. Edwards.—Butterflies of N. A. 2 vols. Plates hand-colored. Vol. I., half calf. Vol. II. in parts. Leyman, Agassiz, Hagen.—Ills. Cat. Mus. Comp. Zoöl. at Harvard. No. I. Ophiuridae. No. II., Acalephae. No. III., Astacidae. All bound in one volume. American Naturalist. Vols. I.-VII. Cloth. Silliman's Am. Jour. of Science and Arts. Third Series. Vols. I.-X. Cloth. Binney.—Terrestrial Mollusks of N. A. Colored plates. 4 vols. Stretch.—Zygaenidae and Bombycidae of N. A. Colored plates. Also a considerable library of monographs, reports, and scientific books, and a large number of duplicates of fossils, minerals and shells. E. A. STRONG, Ypsilanti, Mich., Sept., 1892.

Wants.

A POSITION is desired in the South, preferably the Gulf States, where I can teach the sciences Can also instruct in other branches. Salary only nominal, as I am simply desirous of employment while spending the winter in the South. A private family preferred, but will accept regular school work if not too confining. MORRIS GIBBS, M.D., Kalamazoo, Mich.

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