need none of these charities, but that they cry for fair wages and reasonable rents, and they will furnish their own chapels, their own libraries and reading-rooms.]

BOOK-REVIEWS.

Three Cruises of the United States Coast and Geodetic Steamer "Blake" in the Gulf of Mexico, in the Caribbean Sea, and along the Atlantic Coast of the United States, from 1877 to 1880. By ALEXANDER AGASSIZ. 2 vols. Boston and New York, Houghton, Mifflin, & Co. 8°. $8.

FEW general readers are aware, or at least appreciate, the very great advances that have been made during the last two decades in our knowledge of the deep sea and its life. With the researches of the lamented Pourtales, and the famous voyage of the 'Challenger,' a new epoch was entered upon in the science of thalassography, as our author aptly calls it, that has brought a vast amount of light upon many vexed problems in biology as well as geology; and in the results already attained America justly lays claim to a large share of the credit. The deep-sea soundings and dredgings carried on with the 'Hassler' and 'Blake' of the United States Coast Survey, and more recently with the 'Fish-Hawk' and 'Albatross' of the Fish Commission, have been of the greatest importance.

A score of years ago, with the old line and sinker, depths of eight thousand fathoms were reported with "no bottom:" now the improved machinery and steel-wire lines have brought up mud from the bottom at over four thousand fathoms, and accurate soundings have reached 4,655 fathoms. The 'Blake' made dredgings at the very great depth of 2,400 fathoms in an hour or two's time: by the older methods twenty-four hours were consumed in dredging from half that depth. With the electrical thermometer, accurate readings of the temperature of the water at any depth the sounding-line can reach may be read from the ship's deck, and specimens of water from near the bottom may be brought to the surface, uncontaminated, for analysis. With all these improved appliances, it is not too much to expect that not many years hence accurate contour-maps will be made of all the more important deep-water bottoms, and a vast deal added to the knowledge of the physical conditions and life of the deepest oceans. What light such knowledge may throw upon the physical conditions of our globe and its geological history one cannot foresee, though surmise.

So, too, the deep-sea life, and the conditions under which it exists, are of interest in themselves, as well as for the relations they bear to others. That the normal conditions of life may exist under a pressure of two or three tons to the square inch, may seem remarkable; but it is more remarkable that the same species may adapt itself to the extremes of pressure, or that the same individual may exist indifferently under differences very many times greater than can the terrestrial animal. "Fishes and mollusks are apparently the only animals which show very markedly the effect of diminished pressure. In fishes brought up from deep water, the swimming bladder often protrudes from the mouth, the eyes are forced out of their sockets, the scales have fallen off, and they present a most disreputable appearance." It is not believed that light can penetrate over four hundred fathoms; nevertheless, Professor Agassiz states that "by far the majority of the animals living at a depth of about 2,000 fathoms have eyes either like their allies in shallow water, or else rudimentary, or sometimes very large." What an animal can need of eyes for perpetual life in intensest darkness is hard to say; but perhaps the presence of eyes, and ornamental coloration, in these deep-sea creatures, may mean that rays of light, perhaps the non-actinic ones, may reach even two or three thousand fathoms.

But space will not permit us to touch upon the many interesting topics of this work. Suffice it to say that the two beautifully printed volumes treat very fully of the general methods of thalassographic work, and the physical conditions and faunæ of the deep Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. The work has over five hundred and fifty excellent engravings, the larger part illustrative of characteristic deep-sea types of life. As a sound and permanent contribution to the literature of the deep sea and its inhabitants, the author is justly entitled to great credit.

Entomology for Beginners, for the Use of Young Folks, Fruit-Growers, Farmers, and Gardeners. By A. S. PACKARD. New York, Holt. 12°. $1.40.

IT has been said that a good entomological text-book is one of the most difficult tasks that an author can undertake; and when we consider that there are a million kinds, more or less, of greater and lesser bugs (as the laity will persist in calling insects) in existence, and a great, if not corresponding, variety in their structure and habits, it is not to be wondered at that general entomologists are very few. A high authority upon beetles or butterflies may be, and generally is, very ignorant upon the subjects of bees and bugs, and *vice versa*. The trouble is, the entomologist is yet too busy cataloguing new discoveries, and, as a million more names will be needed before *finis* is reached, he feels no concern except for his own immediate part of the task.

Books, good, bad, and indifferent, there have been in plenty upon insects. The descriptive literature of the two hundred thousand kinds already made known alone must equal that of all the rest of the animal kingdom. But of books that may be classed as serviceable text-books on general entomology, there are very few indeed. Westwood's classical 'Introduction,' Harris's 'Injurious Insects,' and Packard's 'Guide,' have been about the only ones in the English language till lately. It is therefore with the more pleasure that we welcome the present work from the pen of a well-known author and entomologist. We are disposed to find fault with its title, for it really is a better guide to the study of insects than the author's larger work. If there is any thing else, except trivial details, that we would criticise, it is that the author has attempted to compress too much into so small a volume, and that some parts are not as thoroughly arranged and digested as they should be. Its merits are, that it gives in simple language the information and instruction needed by the student who has a fancy or passion for collecting insects, as regards their habits, structure, classification, collection, preservation, and study; and for this purpose we believe it to be the best in the language. To the farmer and horticulturist it will be of less, though considerable, value.

An Elementary Course in Descriptive Geometry. By SOLOMON WOOLF. New York, Wiley. 8°. $3.

THE present text-book is a good introduction to the study of descriptive geometry, its principles and methods being set forth concisely and clearly. After a brief discussion of the principles of projection, the point, the line, and planes and surfaces, are fully discussed. The author has selected the problems so as to elucidate the properties of all geometric combinations, and thus to give the student as well a clear understanding of the methods of descriptive geometry as the greatest possible practice in the use of these methods. Their practical use is always kept foremost before the mind of the student. Thus the use of supplementary planes and projections is introduced by emphasizing the necessity of using special constructions for making clear the character of the object to be represented, and for lessening the constructive difficulties of the case. The methods of rotation and rabattement used for this purpose are fully discussed. The whole field of descriptive geometry is thus treated, the problems being illustrated by numerous clear cuts. The properties of the projections of angles and sections, intersections and tangents, are fully discussed, while the book closes with a chapter on development of surfaces. The conciseness and clearness of the treatment, and the practical arrangement of the material, make the book of great value to the teacher and to the student.

NOTES AND NEWS.

THERE was no address this year by the vice-president of Section D of the American Association.

— The officers of the American Association for next year are as follows: — President: T. C. Mendenhall of Terre Haute, Ind. Vice-presidents: Mathematics and Astronomy, R. S. Woodward of Washington, D.C.; Physics, H. S. Carhart of Ann Arbor, Mich.; Chemistry, William L. Dudley of Nashville, Tenn.; Mechanical Science and Engineering, Arthur Beardsley of Swarthmore, Penn.; Geology and Geography, Charles A. White of Washington; Biology, George L. Goodale of Cambridge, Mass.; Anthropology, Garrick Mallery of Washington; Economic Science and Statistics,

Charles S. Hill of Washington. Permanent secretary: F. W. Putnam of Cambridge, Mass. General secretary: C. Leo Mees of Terre Haute, Ind. Secretary of council: Frank Baker of Washington. Secretaries of sections: Mathematics and Astronomy, G. C. Comstock of Madison, Wis.; Physics, E. L. Nichols of Ithaca, N.Y.; Chemistry, Edward Hart of Easton, Penn.; Mechanical Science and Engineering, James E. Denton of Hoboken, N.J.; Geology and Geography, John C. Branner of Little Rock, Ark.; Biology, Amos W. Butler of Brookville, Ind.; Anthropology, W. M. Beauchamp of Baldwinsville, N.Y.; Economic Science and Statistics, J. R. Dodge of Washington, D.C. Treasurer: William Lilly of Mauch Chunk, Penn.

— Mr. E. T. Dumple, writing in the *Geological Bulletin* of Texas, brings out a very interesting fact, and one which may shed some light upon the question of who were the builders of the shell mounds of the coast regions of Texas. During the great storm of 1886, which so nearly destroyed Sabine Pass, one of these shell mounds, which was near a certain house on the river-bank, and the locality of which was exactly known, was destroyed or carried away by the violence of the waves, and rebuilt nearly half a mile farther up stream than it formerly stood. It is therefore possible that these so-called Indian shell mounds, which are composed almost entirely of shells, with fragments of pottery, and sometimes a crumbling bone or two, were not built, as has been supposed, by Indian tribes who lived on shell-fish, but are entirely due to the action of the water; and the presence of the Indian relics may be easily accounted for by remembering that these mounds are usually found in low ground, and, being high and dry, would naturally be selected as camping-places by the Indians in their hunting and fishing expeditions.

LETTERS TO THE EDITOR.

Our Native Birds.

IN *Science* for Aug. 3 there is an editorial on the re-appearance, in "woods and the meadows in the country," of large numbers of native birds, and it is queried why ornithologists have not offered some explanation of the fact. It is a difficult matter to remember about the number of birds seen from year to year, the exact time of their appearance, and the weather; and, unless some sort of a record is kept, mere unaided memory is often misleading.

I do not know how it is in other places, but on Staten Island there have been no more birds this past spring than in former years, though the cold weather delayed them somewhat in their progress northward, as it so often does. On the 22d of April I saw two swallows, yet on the 25th water froze. On the 2d and 3d of May the warblers came in numbers, and the usual annual ogling with a glass was gone through with.

This summer, also, apparently no more birds have built on the island than there did last; and the number of nests belonging to robins, cat-birds, and chippies in the garden and vicinity has not been added to.

We really suspect that the careful observer has not seconded the popular account of the great bird-visitation, for the reason that he has recorded many others just like it, and believes, as Carlyle says in 'The Sower's Song,' that "this year will be as the years that are past have been." WM. T. DAVIS.

Tompkinsville, N.Y., Aug. 10.

YOUR interesting statement in *Science* of Aug. 3, regarding the return of birds to their deserted haunts in the North and West, prompts me to say that I have noticed this year in this vicinity a remarkable decrease in the number of such migratory birds as nest here.

Orioles, red-birds, and cat-birds are generally quite numerous in this region, and last year impressed themselves upon the memories of the people who cultivate grapes and other small-fruits. This year they are noticeably scarce, and have done very little harm. Robins generally pass here in large numbers, moving South for a few days in the fall, and tarrying a month or more on their northward journey in early spring. During the latter period they are game to the small boy and negro pot-hunter. Last spring they were remarkably scarce.

On the other hand, the English sparrow is here. I noticed the first pair seen in this vicinity eight years ago. The house-marten, which once occupied the eaves of houses in the neighboring city of Oxford, has left in disgust, and the sparrows now monopolize all such desirable locations. This pest, I think, has invaded most of the larger towns in Mississippi, and other Southern States.

Can it be that native birds have concluded that they might just as well meet the invader in their old haunts, as try in vain to escape him by remaining South during the summer? R. B. FULTON.

University, Miss., Aug. 10.

I NOTICED a week or so ago in *Science* that part of the evidence of increased abundance of our native birds consisted of reports from Illinois. Perhaps I can cast some light on that point. I was in northern Illinois till the first of July. Up to that time there had been no signs of an unusual number of birds, except during one week. Then the fields, woods, and even the towns, literally swarmed with small birds for a few days. That was easily explained. It was just at the migrating season of the warblers, and they were bewildered and driven out of their way by a cold storm. Thousands of them died, apparently from cold and exhaustion. They could be picked up in the streets. For several days the papers were full of reports of the "thousands of *strange* birds." Every one said they were birds which had never been seen there before; but any one who has searched the woods knows how many of our birds are unknown to people in general. A considerable proportion of these birds were redstarts. I identified six species, I think, of warblers, but, not having my note-books by me, cannot be positive as to the number. Certainly all, or nearly all, were warblers, and none of them unknown visitants, though all uncommon in the thickly settled places. I believe it was from this occurrence that the report of an unusual abundance of native birds in Illinois originated. L. N. JOHNSON.

Bridgeport, Conn., Aug. 14.

Queries.

34. ARE BATS DIURNAL? — Are bats ever known to be diurnal in their habits? While out fishing a few days ago in this vicinity, about two o'clock in the afternoon of a bright sunny day, I noticed over a pool in the river, perhaps a hundred feet in diameter, a bat as busy and happy, and apparently as successful in his pursuit of insects, as I have ever seen one at twilight. He snapped once or twice at my fly, giving me hopes of landing him. His color was brown, and to all appearance he was of the common species.

J. W. CHICKERING, Jr.

Dennysville, Me., Aug. 14.

35. MILK-SICKNESS. — During a summer visit to the North Carolina mountains, the writer heard much about the 'milk-sickness,' or 'milk-sick' as the natives call it. They seemed to apply the term indifferently to some peculiar disease there prevalent, and to a plant which is believed to be the cause of it. They believe that the cattle eat this plant, and that the disease is transmitted to human beings through the milk. We were repeatedly warned to be careful in our use of milk, especially when we were about to visit the Nantehala Mountains, for there the milk-sick was said to be especially troublesome. We went through those mountains, and heard of it often; but it was always somewhere else, never near at hand. There was one noteworthy exception. A lady with whom we took dinner assured us that there was plenty of it down on the creek, but that her cattle were kept in pasture, so there was no danger. There are said to be two doctors in the Nantehalas who understand the disease; and if either one of them can be reached in time, there is little danger, otherwise it is frequently fatal. The only remedy we heard suggested was apple-brandy and honey. We were unable to learn definitely what the symptoms of the complaint were, nor did we find out what the plant is which is believed to be so dangerous. Is there a well-defined and recognized disease due to this cause, or is it merely some form of fever to which the people are specially subject from their mode of life and surroundings? It almost seems as if there must be something in it, the belief in it is so general; yet, if I mistake not, I have seen the existence of any such disease denied by those who ought to know. L. N. JOHNSON.

Bridgeport, Conn., Aug. 17.