them for years, while all the races subjected to the process yielded a larger crop of better silk than before. So marked was this improvement that a comparison will show it at a glance. In the first report, already alluded to, made in 1885, Mr. Griffitt's yield of cocoons — considered a splendid return at the time — was 78 kilogrammes (171 pounds avoirdupois) per ounce of eggs set to hatch, while in 1890 the harvest was 91 kilogrammes (200 pounds) per ounce of eggs. These figures have been vouched for by M. E. Charmand, chief of the Smyrna branch of the "Direction Générale de l'Administration de la Dette Publique Ottomane, à Constantinople," who reported his observations, gathered from time to time in Mr. Griffitt's factory at Bournabat, to his superiors at the Turkish capital.

Following up these efforts, and stimulated by the ill-success of the French sericulturists, Mr. Griffitt last year achieved an additional triumph, his latest crop showing an advance to 92 kilogrammes (202 pounds) of cocoons per ounce of eggs. This harvest had likewise been watched through all its stages, and reported upon to the Constantinople authorities by the same gentleman already named, who added that as the yield from foreign eggs had been *nil* at Bournabat, their importation into Turkey ought to be stopped.

It will be evident to the readers of the above and former communications that Mr. John Griffitt's single-handed and almost phenomenal success in sericulture, in the face of the utter failure of the best silk-farmers of France, point to Bournabat as the future sericultural school of the world, and as the *entrepot* for robust graine. If further figures be required, they are to be found in the circumstance that during the last four or five years the finest French eggs hatched at Bournabat have only yielded from 10 to 12 kilogrammes (22 to 26 pounds) of cocoons per ounce, as compared with Mr. Griffitt's 92 kilogrammes (202 pounds) per ounce of eggs; while last season, according to M. Charmand, the French eggs laid out at Bournabat did not hatch at all.

WILLIAM COCHRAN.

Overdale, Dunblane, Perthshire.

MR. KOEBELE'S SECOND TRIP TO AUSTRALIA.[1]

WE have not yet mentioned in these pages the fact that Mr. Koebele has been sent out to Australia and New Zealand a second time on a search for beneficial insects. The California State Legislature last winter appropriated $5,000 for sending some one to Australia for this purpose, and this sum was placed at the disposal of the State Board of Horticulture. The board soon afterward made application to the Secretary of Agriculture to have Mr. Koebele sent, placing the entire appropriation at the secretary's disposal. To this proposition the secretary assented on condition that Mr. Koebele should go under instructions from the department, his salary as an agent of the division of entomology being continued (his expenses only to be paid by the State Board of Horticulture), and that his report should be made to the Department of Agriculture, the desire being to co-operate as far as possible with the board. Accordingly, such instructions were given as seemed best to promote the object in view, cautioning Mr. Koebele particularly to run no risk, in his sendings from Australia, of importing with the beneficial insects any injurious species not now existing in the United States which it might prove disastrous to introduce, and taking advantage of the occasion also to have him make every effort to collect in California certain beneficial species to take with him to Australasia, indicating such species as prey upon cosmopolitan insects or species which the colonies mentioned have derived from America.

Mr. Koebele sailed on the August steamer, stopping at Honolulu and Auckland, and arriving at Sydney the latter part of October. At Honolulu he left a number of living specimens of *Chilocorus bivulnerus* in the hands of our correspondent, Mr. A. Jaeger, and secured while there four species of lady-birds, of which he sent small numbers to California by steamer. These were sent for use against the black scale (*Lecanium oleæ*). He also found a few parasitic Chalcididæ on an undetermined Lecanium, and of these he also sent a few specimens. Upon his arrival in New Zealand some of the lady-birds which he had taken with him were alive and began to feed at once upon woolly aphis. Some syrphus flies and lace-wing flies were also in good condition, as were also the larvæ of the Rhaphidia, which feeds upon the codling moth. These were left in competent charge. Specimens of *Scymnus acceptus*, *S. consor*, *S. villosus*, *S. flavihirtus*, and *S. fagus* were collected and sent to California. These all prey upon various species of scale-insects, but it is hardly to be supposed that they will accomplish any better results in California than do our native species of this genus, all of which have a similar habit.

The most encouraging information comes to us under date of Nov. 1 from Sydney. He there finds that *Orcus chalybeus*, a steel-blue lady-bird, is a most important enemy of the red scale. He has found them by the hundreds, and has observed the mature insects eating the scales. All of the trees were "full of eggs," and the larvæ were swarming upon all the orange and lemon trees infested with the red scale. He secured and sent a large lot of the eggs and many of the adult beetles. He also sent the allied *Orcus australasiæ*, also found feeding upon the red scale, and a number of scymnids, one of which was very numerous, feeding upon the same scale-insect. Another species was found feeding mainly upon the flat scale (*Lecanium hesperidum*) and the black scale (*Lecanium oleæ*). He also forwarded a number of *Leis conformis*, which, as stated in Bulletin No. 21 of this division, is the commonest enemy of the woolly root-louse of the apple. Unfortunately Mr. Koebele does not state whether the three insects mentioned as feeding upon the red scale were successful in holding that destructive insect in check, and upon this point naturally depends much of their value to California. Our agent at Los Angeles, Mr. D. W. Coquillett, has been instructed to spare no pains to properly care for and colonize whatever may be received from Mr. Koebele, and is fully prepared to do so. This large sending arrived at Los Angeles, we are sorry to state, in rather bad condition. Twenty-eight beetles, however, were alive, including nine of *O. chalybeus*, and no effort will be spared to keep them in good condition and to induce them to propagate.

[1] From Insect Life for December, issued by the U. S. Division of Entomology.

LETTERS TO THE EDITOR.

*** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

On request in advance, one hundred copies of the number containing his communication will be furnished free to any correspondent.

The editor will be glad to publish any queries consonant with the character of the journal.

The First Locomotive.

I AM surprised that your correspondent, "M. H.," in his article in your issue of the 15th, "The First Locomotive Run in America," should have been so mistaken in its name. There is a small

town in England which at one time had a great reputation for locomotive building. It is Stourbridge. The locomotive which M. H. correctly states was operated at Honesdale over a half-century ago, was made there. From this fact it was called the Stourbridge Lion, not "Stonebride," as your correspondent has it. This name and the reason for it are very familiar in Scranton, whence I write, but as a clincher, I may say that I recently conversed on the subject with a lady who enjoyed the acquaintance of Mr. Allen, the engineer of the locomotive in question, and from her I once more learned the facts here narrated.

STANLEY M. WARD.

Scranton, Pa., Jan. 26.

A Section of Botany in the American Association.[1]

THE thought of having a section for the botanists in the American Association should be very inspiring to all who have at heart the thorough study of plant life in America. All admit that Section F is now crowded with members and papers, and doubtless many are deterred from taking part in the sessions from lack of opportunity. At the last meeting numerous papers were passed without comment or discussion that the programme might be carried out.

The work of the section has naturally divided itself into two groups, namely, that pertaining to animal life, and to botany. In order to gain more time and draw together more closely those who are interested in particular branches, clubs have been formed. Thus the entomological and botanical clubs have arisen and grown into features of the week of as much importance as the section and more perhaps to the younger members. These clubs should, and doubtless will, be continued. In the section itself for years there has been an attempt on the part of the programme committee to group the subjects so that zoologists and entomologists have had a half-day assigned them, alternately with the botanists. This has virtually broken up the continuous attendance of members upon the sectional meetings, and excursions or other events are indulged in by the party not upon the programme. Perhaps to our shame, this has been particularly true of the botanists, who have sometimes left the zoologists with a depleted but more homogeneous and attentive audience. Also within the past few years the plan of having time assigned for a series of connected papers upon one or more of the branches of science coming under the present scope of the section has still further differentiated the work. As Section F now stands its sessions are largely an alternation of groups of subjects with an audience that shifts with the programme.

A notice of an amendment to divide Section F is therefore well founded; the division is very natural and one that, in fact, has already been made, so far as arranging the programme by grouping the subjects and by the work of the clubs will permit it. In short, it has gone as far as it can save by a division of the section itself.

The contemplated division will bring many gains without corresponding losses. Time will then be offered for thorough sectional work upon the two large and growing fields of biological science, instead of the rapid reading of papers, as at present, followed by little or no discussion before a half-interested audience.

With a Section of Botany, for example, officers can be selected who will be interested in all subjects presented, a condition that does not always obtain under the present arrangement, to say nothing about the difficulty that may now arise as to the proper apportionment of the official plums among the aspirants for honors.

If we believe in the principle of division of labor and specialization, in short, in the theory of evolution in its broad and best sense, we cannot but feel that the proposed step is in the direction of advance, and realize that the last few meetings of Section F indicate clearly that the time to take the step forward is at hand.

The best way to make the importance of a division still more emphatic is for every student of the biological sciences to come, if possible, to the Rochester meeting with a large number of full papers, and strive to have as many as possible read and discussed in Section F, the balance of shorter ones to be considered as best they may at the clubs. As a section of botany is asked for, let the botanists in particular show, by their works, their faith in the raasonableness of the demand.

BYRON D. HALSTED.

Rutgers College, Jan 25.

[1] This letter also appeared in the Botanical Gazette.

AMONG THE PUBLISHERS.

THE Regent Street Polytechnic Institute of London proposes to bring over a thousand or more of its young clerks, mechanics, and apprentices to visit the Chicago Exposition; and its secretary, Mr. Robert Mitchell, is about to arrive at New York on his way to Chicago, for the purpose of making transportation and other advance arrangements. Steamship arrangements have already been made. Mr. Albert Shaw, American editor of the *Review of Reviews*, describes in an illustrated article in the February number "The Polytechnic and its Chicago Excursion."

— In the February number of *Babyhood* Dr. William H. Flint discusses the dislikes of children to certain articles of food and the means of overcoming such antipathies. Of equal value to mothers is an article on "Colic," by Dr. C. L. Dodge, in which the causes, symptoms, and treatment of that common ailment are clearly described. "Ought Obedience to be Enforced?" "The Tyranny of Whims," "Talking about Children in their Hearing," etc., are some of the other topics discussed. The medical editor furnishes advice concerning such "Nursery Problems" as the voracious appetite often seen in children, the desirableness of giving fruit to infants, the treatment of eczema, etc.

— Claus Spreckels, the millionaire sugar manufacturer, whose plantations are in the Sandwich Islands, has written to Mrs. Helen Mather that he has carefully read her book, "One Summer in Hawaii" (Cassell Publishing Company), and that he "commends it to the earnest attention and study of all such as are desirous of obtaining a knowledge of the beauties of that comparatively unknown and still less appreciated Paradise of the Pacific."

— The Cassell Publishing Company will publish in February "Across Thibet," by Gabriel Bonvalot, author of "Through the Heart of Asia," with upward of one hundred illustrations, made principally from photographs taken by Prince Henry of Orleans. Of this book the London *Times* says: "M. Gabriel Bonvalot has already achieved a high reputation as a central Asian explorer. 'Across Thibet' is thus recommended alike by the character and literary skill of the explorer aud by the interest and novelty of the regions explored by him. The journey here described was undertaken in the company of Prince Henry of Orleans, son of the Duke de Chartres, and of Father Dedeken, a Belgian missionary, with a rare taste and aptitude for adventurous travel and a keen appetite for sport, and it tried to the utmost the endurance and the enterprise of all three. The copious illustrations due to Prince Henry's camera are full of interest and the translation is excellently done."

— There has just appeared in the "Johns Hopkins University Studies in Historical and Political Science" a pamphlet by Paul E. Lauer on "Church and State in New England." Beginning with the Reformation in England, the author traces the movement of thought on the relations of church and state, first among the Puritans of England and then among their descendants in the New World; and shows how the new ideas of religious freedom expressed themselves in political action, ending with the complete secularization of the state in the present century. The main principles involved and the mode of their application are well shown, and the narrative, though desti ute of imaginative insight, is straightforward and clear. Unfortunately for Mr. Lauer, however, it is all a threshing of old straw. The story he relates has been told so often and so well that this pamphlet is more likely to weary than to interest the reader. Moreover, it is impossible to treat satisfactorily of the relations of church and state in any nation apart from the general religious and political history of the time, so that Mr. Lauer's work is incomplete and fragmentary.