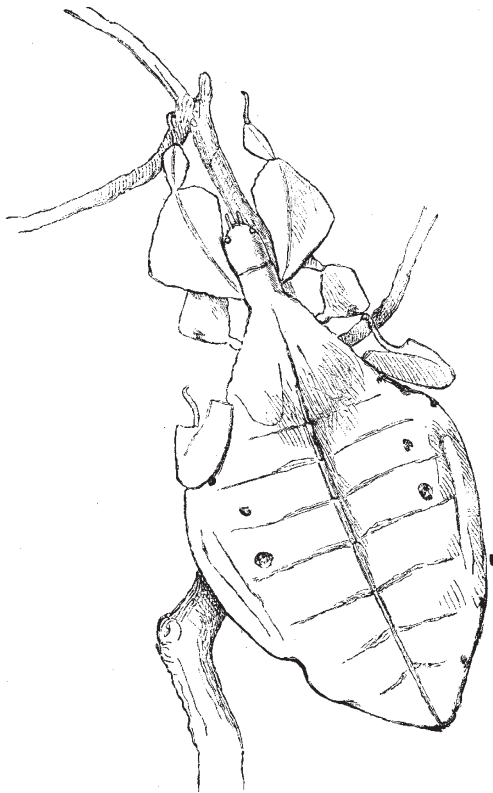


THE ZOOLOGICAL SOCIETY'S INSECT HOUSE.

ALTHOUGH it has long been the practice of entomologists to keep private collections of the larvæ of insects, for the purpose of studying their metamorphoses and of obtaining perfect specimens of their fully-developed forms, there is, we believe, still only one place where the attempt is made to attract public attention to this most varied and wonderful group of animals by an exhibition of them and of the different stages of their life-history. This place is the Insect House of the Zoological Society of London in the Regent's Park Gardens, which has now been maintained with considerable success for several years.

At this season of the year the Insect House is generally at its best, and examples of the perfect insect are continually to be seen emerging from the chrysalis.



Leaf-insect of the Seychelles (*Phyllium gelonus*).

A very interesting and novel addition has just been made to the collection in the form of a specimen of one of the Leaf-insects, presented by Lord Walsingham, who received it from the Seychelles Islands through Colonel Larking. Though not yet fully developed, there can be no doubt it will prove to be an example of *Phyllium gelonus*, Gray. The insects of this remarkable genus are all Oriental, inhabiting the tropical regions of Asia, and extending to Mauritius and the Seychelles. It has hitherto proved impossible to induce them to continue their species in this country beyond a single generation, so that it is only occasionally that they can be seen alive here. So long ago as 1854 a living specimen of an Indian species, *P. scythe*, was exhibited in the Botanic Gardens at Edinburgh, where it attracted so much attention that it was found necessary to limit its exhibition to four days in each week. This restriction was (as stated by Murray) adopted because, in

spite of the old saying that seeing is believing, it was found in the case of this insect that seeing was disbelieving. On those who inspected it insisting that there was no insect on the plant, but only a leaf, it had to be stirred up to convince them of the truth, and this process of continual provocation was found to be very injurious to the constitution of so peaceable a creature.

The resemblance of many of the species of this group of Orthoptera to portions of the plants on which they are found is so extreme that it has given rise to a firm conviction in the minds of the inhabitants of some of the regions in which they are found that they are portions of the actual plant transformed into living insects. There is certainly more to be said for the belief in this metamorphosis than there is for some of the transformations related by Ovid; and M. de Borre, in the *Comptes rendus of the Belgian Entomological Society* (1883), has explained the reasoning by which it is justified. The people having observed the gradual growth of the creature and the development of the appendages of the body, while they have failed to see it when very small and issuing from the egg, maintain stoutly that a young leaf gradually grows into a living insect. The species of the genus *Phyllium* all have a remarkable resemblance to leaves, but it appears as yet not to be known whether the different species have a special resemblance to the foliage on which they feed.

The late Andrew Murray published an account of the Edinburgh specimen in the *Edinburgh New Philosophical Journal* for 1856, and then said that he "should not be at all surprised if, in the course of a few years, the Leaf-insect should be as common an inmate of our conservatories as the canary-bird now is of our dwellings." This hope has, however, not been realized, and for our opportunities of seeing it in the living state we are obliged still to rely on the kindness of naturalists who may be stationed in the tropical regions where these creatures exist, and who will take the trouble of bringing or sending them or their eggs over to us. The difference between a living and a dead insect is not so extreme as that between a live dog and a dead dog, but still it is very great, and one of our older entomologists used to say that he never really knew the species of an insect till he had seen it alive.

The Insect House in the Zoological Gardens affords, as we have said, the only opportunity that the English public have of seeing alive some of the wonderful forms of tropical insects. But, as we have already remarked, the difficulty of perpetuating the life of these examples of exotic Nature's variety and luxury beyond a short period is excessive, and reaches its maximum in London. There is, perhaps, nothing more remarkable in Nature than the pertinacity and rapidity with which the generations of many of the lower forms of insect life are produced. *Phylloxera*, *Aphis*, scale-insects almost defy the efforts of mankind to control them, and the resources of even scientific civilization contend with them as yet almost in vain. But in many of the more evolved forms of insects we find a very different condition prevalent. Even mating can, in a large number of cases, be induced only when the creatures are placed in exactly appropriate circumstances, and afterwards the insects will only deposit their eggs in such places and under such conditions as insure at least a probability of congenial existence for their progeny. In the case of many species the females prefer to die with their eggs undeposited, rather than place them in conditions that are at all inappropriate. Thus the difficulty of keeping up a varied supply of curious forms for the Insect House is very great.

The different kinds of silk-producing moths have attracted much attention for a considerable number of years past, and in the case of several species fertile eggs are readily procured. These insects, being in many cases very large and attractive creatures, excite a good deal of

interest in the visitors to the Insect House. Just at present these moths are about commencing their individual life-cycles afresh; eggs of several species have been procured, and will shortly be hatched. The caterpillars are even more interesting than the moths themselves, and their remarkable shapes and forms, and their wonderful spines and thorns, are of much interest to naturalists. Just now, too, there may be seen in the Insect House a delightful example of the early stages of insect-life in the form of the caterpillar and chrysalis of *Limenitis disippus*. This is a North American butterfly, the egg of which is hatched towards the end of summer or in autumn. Its young larva constructs for itself a delicate habitation by joining together the edges of the leaves of the willow on which it feeds, so as to form a cylindrical tube, which it lines with silk and closes at one end. The fragile creature is thus able to outlive the storms of wintry wind and weather, and to evade the ravagers of the animal world in search of food. In the protection of this dwelling it can be transmitted from North America to this country without injury to its vitality. As seen in the Insect House, the caterpillar is a curiously mottled, pale-brown, greenish and grey creature, with head bent down, but bearing on the prominent part just behind it two rather long, erect, slender horns of a deep black colour, each of them numerous spined. The chrysalis is even more remarkable, and hanging down from a twig displays itself in a very prominent manner. On the middle of its body there is an abrupt, elongate, black hump, about as conspicuous a deformity as could be devised, while at the base of this, on each side, there is a band of delicate and beautiful metallic colour. This band is in some way dependent for its tint on the living creature within, for no trace of it can be seen in the pupa-shell after the insect has escaped. This species of butterfly belongs to the family *Nymphalidae*. The extraordinary spines of the caterpillars of this group have recently been studied, and many of them delineated, in an elaborate and interesting memoir by W. Müller, which will be found in the first volume of the *Zoologische Jahrbücher*.

The Diurnal Lepidoptera are not so well represented in the Insect House as they usually are at this time of year, there having been a great scarcity of pupæ last summer. But, besides the *Limenitis* above referred to, examples of one of the Swallow-tails (*Papilio machaon*), and of one of the large North American Skippers (*Gonoloba tityrus*), are now daily emerging from their pupa stage, and fresh additions are shortly expected.

NOTES.

WE are glad to learn, from the list of birthday honours, that the Companionship of the Bath has been conferred on Dr. James Bell, F.R.S., and the Companionship of St. Michael and St. George on Mr. Ellery. A baronetcy has been granted to Prof. Stokes; but, seeing that Prof. Stokes has been for many years President of the Royal Society, and that the Government never thought of offering him any special honour until he entered the House of Commons, we may conclude that he receives his baronetcy not as an illustrious investigator, but as a politician.

ON Saturday, Sir Frederick Bramwell, as President of the British Association, entertained the President-Elect, Prof. W. H. Flower, C.B., F.R.S., a large number of members of the Association, representatives of science, and other guests being invited to meet him. The dinner was given in the hall of the Goldsmiths' Company, the use of which was granted to him for the purpose by the Wardens of the Company. The list of guests included Lord Bramwell, F.R.S., Mr. Justice Denman and Mr. Justice Manisty, Mr. C. Lucas, Prime Warden of the Goldsmiths' Company, the Mayors of

Newcastle and Gateshead, Sir F. A. Abel, C.B., F.R.S., Captain Abney, R.E., C.B., F.R.S., Prof. Roberts-Austen, F.R.S., Prof. Ayrton, F.R.S., the Ven. the Archdeacon of Bath, Sir I. Lowthian Bell, F.R.S., the Rev. Prof. Bonney, F.R.S., Sir J. Crichton Browne, F.R.S., Mr. Brudenell Carter, Mr. C. Cochrane (President of the Institution of Mechanical Engineers), Sir John Coode, K.C.M.G., Mr. W. Crookes, F.R.S., Prof. Boyd Dawkins, F.R.S., Prof. Dewar, F.R.S., Sir James Douglass, F.R.S., Mr. W. T. Thiselton-Dyer, C.M.G., F.R.S., Dr. John Evans, F.R.S., Mr. Francis Galton, F.R.S., Dr. Gamgee, F.R.S., Dr. Geikie, F.R.S., Mr. R. Giffen, Mr. Alfred Giles, M.P., Dr. Gladstone, F.R.S., Mr. G. B. Gregory, Mr. Thomas Hawk-ley, F.R.S., Prof. Henrici, F.R.S., Mr. Victor Horsley, F.R.S., Major-General Hutchinson, R.E., Prof. Judd, F.R.S., Colonel Laurie, C.B., M.P., Prof. Liveing, F.R.S., Mr. J. Norman Lockyer, F.R.S., Prof. McLeod, F.R.S., Major Marindin, R.E., Mr. Ludwig Mond (President of the Society of Chemical Industry), Mr. J. Fletcher Moulton, Q.C., F.R.S., Admiral Nicholson, C.B., Admiral Sir E. Ommanney, C.B., F.R.S., Sir P. Cunliffe-Owen, K.C.B., K.C.M.G., Dr. William Pole, F.R.S., Mr. W. H. Preece, F.R.S., Colonel Rich, R.E., Prof. Romanes, F.R.S., Sir H. E. Roscoe, M.P., F.R.S., Prof. Rücker, F.R.S., Dr. Russell, F.R.S. (President of the Chemical Society), Prof. J. S. Burdon Sanderson, F.R.S., Prof. Schäfer, F.R.S., Dr. P. L. Sclater, F.R.S., Sir William Thomson, F.R.S., Sir William Turner, F.R.S., Major Tulloch, R.E., Sir C. W. Wilson, R.E., K.C.B., K.C.M.G., Sir Francis de Winton, K.C.M.G., Mr. E. R. Wodehouse, M.P., and many others. In England, which in this respect differs widely from the other leading countries of Europe, men of science, including even those in State employ, are not invited to take part in such State functions as the birthday dinner. It was a happy thought on Sir Frederick Bramwell's part, therefore, to select the Queen's birthday as the day on which his dinner was to be given. Many of the most eminent men of science in the country had thus an opportunity of associating themselves with the expression of the general feeling of the community on an interesting public occasion. By this time it should surely be manifest to everyone that, on all such occasions, science should be prominently represented. The State has nothing to lose, but, on the contrary, has much to gain, by the full recognition of science as one of the most vital elements of national progress.

THE gold medal of the Linnean Society has been awarded this year to Prof. de Candolle, the eminent botanist, in recognition of his distinguished services to botanical science.

In his Presidential address, delivered at the anniversary meeting of the Linnean Society on the 24th inst., Mr. Carruthers gave an interesting and detailed account of the existing portraits of Linnæus, many of which are in the Society's possession. The result of his inquiries showed that there are seven original and authentic portraits of Linnæus in existence; that the engravings most widely known are from the originals by Inlander and Roslin; and that these give the most faithful representation of the features of the great naturalist.

A NEW departure, likely to be productive of far-reaching results, has recently been taken in connection with the scientific work of the Scotch Fishery Board. Since 1809 the Scotch fisheries have been under special supervision, and at one time the Scotch fishery statistics were in advance of those of any other country. Previous to 1882 occasional scientific inquiries were made by Sir Lyon Playfair and Prof. Allman, and since 1882 investigations have been systematically carried on under the direction of Prof. Ewart and Sir James Maitland. Year by year the scientific work has been extended, and for some time a scientific department has existed in everything but in name.