in its period and the much larger change observed in the period of another variable of the same class in Cygnus becomes important. Besides the possibility of a third disturbing body it may be remarked that the existence of the solar corona and perhaps other appendages of the sun suggests that a resisting medium may exist in the entire space traversed by Algol and its satellite at each revolution. Also if the influence of gravitation is propagated in time (with whatever degree of velocity) the very rapid angular motion of a satellite which performs a complete revolution in less than three days (and in another variable of this class in twenty hours) could hardly fail to exhibit traces of this time-propagation. The attractive force, in fact, would never act in the line joining the centres of the principal star and satellite, and the deviation would probably be perceptible. I hope some mathematical astronomer will take up the problem, and show what the effects of each of these supposed causes would be. W. H. S. MONCK.

16 Earlsfort Terrace, Dublin, December 21, 1889.

Maltese Butterflies.

IN reading Mr. Wallace's "Darwinism" I am reminded by his observations on Island fauna (p. 106) of the impressions made upon me by the natural productions of Malta. My time was so fully occupied that I had little opportunity of exploring the country districts. I paid one visit to the extraordinary ruins of a Phœnician temple at Hagiar Kim, and one to the curious islet in St. Paul's Bay. On the latter I noticed several strange thistles and a beautiful flower—something like a large pink or purplish Tutsan. On the barren wastes round Hagiar Kim many familiar wild flowers grew, but all seemed shrunk and shrivelled as compared with those of Britain. The only unfamiliar one was called by the natives "the English flower." It was a tall trefoil with a drooping yellow trumpet-flower (not at all papilionaceous in form), and grew plentifully by the edges of the dustiest roads—unlike anything I know in England.

I lived for some time at the Imperial Hotel, at Sliema, which has a somewhat extensive garden, in which I used to spend about half an hour every morning. During April and May it was very lovely. The oleanders were then in their richest bloom; a shrub like a gigantic heliotrope, both in flower and leaf, was frequented by myriads of humming-bird moths; there were a few strawberry-plants, the fruit of which was delicious, although even smaller than that of our own wild kind; but most attractive to me were the clumps of valerian and scabious which were haunted, just as at home, by crowds of butterflies. These included blues, coppers, wood-ladies, painted-ladies, red-admirals, tortoise-shells, and swallow-tails. All of these were smaller than their English relatives are, and much less brilliant in colour. The swallow-tails were especially dwarfed in their proportions. I am puzzled to account for their presence in Malta, as there is nothing like a marsh or a fen in the whole island, whilst in England they are only to be found in the district of the meres. Can any of your readers throw light on this mystery? I saw several of the larger hawk-moths. They did not seem to suffer in size, but even they were dimmer in their colours.

Hoping to get a general idea of Maltese entomology, I visited the University Museum—only to find a few cases of insects in which every specimen had been devoured by mites!

GEORGE FRASER.

Leighside, Tunbridge Wells, December 22, 1889.

A Preservative.

I HAVE been very much troubled in conducting classes in mammalian anatomy by the want of a preservative medium which would retain the natural colour and texture of tissues, would impart to them no offensive smell, would be inexpensive, and easily handled. Various experiments with freezing, alcoholic, glycerine, and other media have all proven failures, and this fall I turned to experimentation upon the simplest and cheapest of all chemical reagents—water and table-salt. My entire success with these was so satisfactory that I shall, at the risk of telling an old story, state the experiments here.

I tried preserving squirrels in three strengths of salt solution, one of 5 parts by weight of salt to 95 of water, a second of 10 per cent. salt, and a third of 15 per cent. All gave satisfaction, but the 10 per cent. seems best, because the weakest solution in which putrefaction could not take place. Specimens placed in five times their bulk of this solution retain the natural flexibility of all the tissues; the peculiar look of nerve-tendon and blood-vessel against muscle is retained; the tint of muscle is faded somewhat by the solution of hæmoglobin from the blood, but it is still distinctly reddish; there is no putrefactive odour; all of this after four weeks standing in the laboratory.

This is so simple a preservative that I wonder that it is not in common use. H. LESLIE OSBORN.

Hamline University, St. Paul, Minnesota,
December 7, 1889.

The Evolution of Sex.

IT is a fact well known to pigeon fanciers that the two eggs laid by pigeons almost invariably produce male and female. But no attempt appears to have been made to ascertain which of the two eggs produces the male, and which the female. The second egg is laid about twenty-four hours after the first. I have kept pigeons for seven or eight years, and have only met with one or two instances of the young birds, produced from the two eggs, being of the same sex. Recently I have made several experiments to ascertain if any relation exists between the order in which the eggs are laid and the sexes of the young birds produced. The results show that the egg first laid produces the female, the second egg the male. It may, perhaps, be well to give the experiments.

(i) Egg 1 of pair A produced a female; egg 2 was bad.
(ii) Egg 1 of pair B produced a female; egg 2 a male.
(iii) Egg 1 of pair B produced a female; egg 2 a male.
(iv) Egg 2 of pair B produced a male; egg 1 was bad.
(v) Egg 1 of pair C produced a female; egg 2 was bad.
(vi) Egg 2 of pair D produced a male; egg 1 was broken.

These experiments were made on white fantail shakers. A large number of experiments must be made to prove if this relation does exist; should it be found correct, an examination of the eggs and of the ovary of the parent might throw some light upon the "evolution of sex." M. S. PEMBREY.

Oxford, December 14, 1889.

Fighting for the Belt.

A FIGHT has been going on in my verandah for the last half-hour between two young birds—minas—with four birds of last season looking on.

Now the fight is just over. I have watched it throughout, and am positive that one of the on-lookers walked often round the combatants without interfering; and that another on-looker came, when he (or she?) could, and attacked one of the fighters. I say "came when he could," because the other on-looker prevented him if possible—even fighting to that end. It seemed to me very much as if two youngsters from different nests were fighting for the belt, and the parents looking on—the one complacently at her offspring's success, the other angry and breaking the rules of the ring to help the weaker. F. C. CONSTABLE.

Karachi, December 1, 1889.

The British Museum Reading-Room.

THE proper ventilation of this spacious room is a problem, surely not insoluble, but still awaiting solution. Is it not a serious grievance that to make use of one of the finest libraries in existence, means, for many, injury to health? Bad headaches and other ills, due to the stuffy and impure atmosphere which collects about the desks, are a common experience; and I know men who have given up going to the place on that account. For readers who live by work which can only be done there (some of whom are women), the matter is especially grave. Officials, again, will tell you that they often feel thoroughly done out after their day's work, which in itself is not generally severe. It seems to me the atmosphere improves after the lamps are lit; possibly owing to the upward current of heated air. If this were verified, it might offer a clue to improvement. The whole matter calls for thorough scientific investigation; and I would suggest, as a preliminary step, that analysis be made of the air (say) on a Saturday afternoon, with regard not only to its gaseous constituents, but also to micro-organisms, which are no doubt plentiful. A. B. M.