

to the entomologist, but also to the practical cultivator, whether or field or garden crops. The persistent energy with which Miss Ormerod and her coadjutors have advanced these inquiries, the result of which is the full and elaborate report before us, is worthy of all praise. It is satisfactory to learn that for the coming year a large number of fresh observers have promised their help, and with the hope that this notice may induce some of our readers to communicate their own experiences to Miss Ormerod at Dunster Lodge, Spring Grove, Isleworth, we may perhaps mention the following as a guide to the kind of information required :—

1. Any notes as to the extent of insect injury, and estimated pecuniary loss from such.

2. Remedies found of practical use in checking such ravages.

3. Any notes of coincident circumstances such as of weather influences, or surroundings, or state of the soil which may increase or diminish insect attack.

It is pointed out that even the shortest notes are valuable when collated with others, and the importance of noting down the observations as they occur is also impressed upon observers.

JOHN R. JACKSON

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

The Density of Chlorine

IN NATURE, vol. xxi. p. 350, my friend, Mr. F. D. Brown, argues that the low density of chlorine at high temperatures may be explained on the assumption that it undergoes decomposition in the sense of the equation $Cl_2 = 2Cl$, thereby renewing a suggestion made by Lieben in a communication to the French Academy shortly after the publication of V. and C. Meyer's first paper.

A few days ago it might have been said that, however probable such an explanation might appear to be on general grounds, there was nothing in the Meyers' observations to justify it rather than the alternative hypothesis that the chlorine underwent decomposition into other as yet unknown substances. On the contrary, taking into account Meyer's observations on iodine, which by reason of their greater number may be regarded as furnishing more conclusive testimony than the more limited series with chlorine, there was apparently distinct evidence in favour of the latter view. The dissociation of iodine, according to Meyer, takes place within a range of about $400^{\circ}C.$, between 600° and $1,000^{\circ}$, and a further increase of nearly 600° is practically without effect; whereas had the change been of the character indicated by Mr. Brown, a further diminution in density ought to have been observed.

A recent communication to the French Academy by Crafts and Meier, however, materially advances the discussion. These observers maintain that Meyer's estimates of temperature (made by the calorimetric method with a platinum block) are excessive, and that, in fact, the highest temperature realisable with the Perrot gas-furnace (determined by an air thermometric method), is $1,390^{\circ}$ instead of about $1,570^{\circ}$. They have also obtained a considerably lower value for the density of iodine at the highest temperature of the furnace, the quotient of the theoretical density ($I_2 = 8.786$) by the observed density being '60 for their highest observation, and '65 for Meyer's. Their results are as follows :—

Temperature.	Density.		
445	8.70	8.78	8.75
830-880	8.04	8.11	
1,020-1,050	7.02	7.18	6.83
1,275	6.07	5.57	
1,390	5.23	5.33	

Should it ultimately be proved that the molecules of the halogens are thus dissociable, our present views regarding phenomena such as the nascent state and the influence of light in inducing hydrogen and chlorine to enter into reaction will meet with much support; the appeal as to their elementary nature will then be entirely thrown on the spectroscope for decision.

London Institution, April 10 HENRY G. ARMSTRONG

The Omori Shell Mounds

I HAVE received the enclosed letter from Prof. Morse, with a request that I should forward it to you. I hope that it may be published, for the article in NATURE to which it refers seemed to me to do very scant justice to Prof. Morse's work. I refer more especially to the evidence adduced by him on cannibalism by the ancient inhabitants of Japan—on their platycnemid tibie—on their degree of skill in ceramic art—and beyond all other points, on the changes in the molluscan fauna of the islands since the period in question.

It is a remarkable fact, which incidentally appears in Prof. Morse's memoir, that several Japanese gentlemen have already formed large collections of the shells of the Archipelago, and have zealously aided him in the investigation of the prehistoric mounds. This is a most encouraging omen of the future progress of science in Japan.

CHARLES DARWIN

Down, Beckenham, Kent, April 9

IN NATURE, vol. xxi. p. 350, is a review of my memoir on "The Omori Shell Mounds" by Fredk. V. Dickins. I do not now heed the spirit in which it is written, nor would I deem it worthy of notice did it not occur in the pages of your widely-read magazine. One expects in a reviewer some knowledge of the subject he reviews. Mr. Dickins, by a series of mistakes, betrays his ignorance of the whole matter. The extraordinary blunder he makes regarding the Ainos has already been promptly corrected by a Japanese gentleman residing in London. It is charitable to assume that Mr. Dickins has not lived in Japan, otherwise he would not, in common with so many of his countrymen, commit the wilful blunder of calling the principal city of the empire by its wrong name. On the other hand, it is impossible he could have seen the Omori deposits, otherwise he would not make another blunder by expressing his belief that they have been completely swept away, when in truth but a small portion of them have been removed. He says: "These mounds consist for the most part of shells, little, if at all, distinguishable from what are still found in abundance along the shores of the Gulf of Yedo." Had he taken the trouble to read the memoir he attempted to review he would have seen that all the species occurring in the mounds vary in size, proportion of part, and relative abundance of individuals from similar species living along the shores to-day. That some species extremely abundant in the mounds are scarcely met within the vicinity, while one species has never been found within 400 miles of Omori; indeed, it belongs to a different zoological province!

His complaint at the large number of plates given to the illustration of pottery, tablets, &c., shows how incapable he is of appreciating that part of the work which has received the highest commendation from archaeologists, namely, the presenting as far as possible an exhaustive illustration of every form of vessel and variety of ornamentation. He laments the absence of a plate giving figures of the bones and shells, especially of the latter, which are stated to belong to extinct species. Had he looked at the last plate (a copper plate, by the way, and not a lithographic one, as he calls it) he would have seen every species, with one exception, figured, when similar forms from the neighbouring shores could be got for comparison.

I did not feel justified in comparing shell-mound forms with similar forms from Niigata, Kobe, or Nagasaki, and the reason will be obvious to any one having the slightest familiarity with the variations that species show in widely separated localities.