

F.R.S., as editor, in the *Quarterly Journal of Microscopical Science* for October, in reference to my studio and agency for the supply of microscopic organisms. Of course I have to thank him most sincerely for calling the attention of naturalists to my efforts, and so strongly calling on them to support me, but he has given me credit in some directions which is due to other naturalists to whom I am under considerable obligations. I wish to correct this view at once by writing to your periodical in preference to waiting till the next number of the *Quarterly* can appear. Prof. Lankester's language may lead those who have not seen other reports to put down the actual first finding of several organisms new to the British fauna to me, whereas several of them were first picked up by others.

The *Leptodora* was found at Olton during a visit made by a party of the Birmingham Natural History and Microscopical Society on July 26. Whilst the president, Mr. Graham, the curators, Messrs. Levick and Lloyd, some other members, and myself, were searching the pool from a boat, Mr. Levick's unusually sharp eyes first called the attention of the others to some lively organism in his bottle, which he at first thought to be a larva, and Mr. Graham was, I believe, the first to suggest that it was probably a larval form of an Entomostracan. After this they were collected in large numbers with the net. As soon as possible I asked my friend Mr. Forrest to make a drawing, which I had printed, and drew up a short account of it for my subscribers, describing it as a larval form of one of the Entomostraca; but before I had finished writing this I found one carrying four large eggs in the second segment of the body, which fact I added to my description, and which I pointed out would lead to the supposition that it was no larva, but a mature animal. I sent the specimens out on August 1, and the earliest notice I had from my subscribers was from Sir John Lubbock, F.R.S., who wrote by return to say he was much interested in the curious crustacean which he believed to be new to this country, and on August 6 Prof. Lankester wrote to say the crustacean I had sent was the *Leptodora hyalina*. In looking over the water in which we had taken the *Leptodora*, I found another Entomostracan which was new to me, and I called Mr. Forrest's attention to it, and gave him some specimens which he took home and studied, and finding no trace of them in Baird's "Entomostraca," he made a drawing of it and drew up a description of it for the *Midland Naturalist* of September, under the name of *Daphnia bairdii*. With permission of the editor I distributed copies of this plate and description, with living specimens, to my subscribers on August 8, and on the 13th Prof. Lankester wrote me to say "the beautiful *Daphnia bairdii* of Mr. Forrest is the already described *Hyalodaphnia kahlbogensis* of Schödler" (see Mr. Forrest's further remarks, *Mid. Nat.*, November, page 281). In looking over Prof. Lankester's remarks, I was surprised to see his account of the new Protozoon, which reminded me that on April 30 he had written to me saying that the Amœbæ gathering was very interesting, and asking me to send him a good lot more, as he thought he had found something new, but I could only send him a small tube more, as this, together with the large Amœbæ to which he refers, came from a small beaker aquarium in the study of my friend Mr. Levick.

I must apologise for having taken up so much of your space, but in fairness to Mr. Levick and Mr. Forrest, I could not well let the report pass without comment, giving them full credit of first finding the objects; but at the same time I cannot help thinking that the discoveries (if ever published) would have been much longer before they had been brought before the scientific world, had it not been for the distribution of the specimens through my agency. As it is, however, my wish not to take more credit than is due, I shall always be glad to point out the first finders of organisms which may be entrusted to me for distribution, and which may afterwards turn out to be of any special interest.

In furtherance of Prof. Lankester's kind appeal to naturalists for the pecuniary support of my agency, I must really ask them to act upon it, as, so far, my studio is not sufficiently remunerative to induce me to persevere with it much longer, as my receipts for the last year have barely covered my office rent, collecting, and incidental expenses.

THOMAS BOLTON

17, Ann Street, Birmingham, November 19

Intellect in Brutes

THE following is a curious instance of discrimination, which I have observed in my bullfinch. He is in the habit of coming out

of his cage in my room in the morning. In this room there is a mirror with a marble slab before it, and also a very cleverly-executed water-colour drawing of a hen-bullfinch, life-size. The first thing which my bullfinch does on leaving his cage is to fly to the picture (perching on a vase just below it), and pipe his tune in the most insinuating manner, accompanied with much bowing to the portrait of the hen-bullfinch. After having duly paid his addresses to it, he generally spends some time on the marble slab in front of the looking-glass, but without showing the slightest emotion at the sight of his own reflection, or worthy it with a song. Whether this perfect coolness is due to the fact of the reflection being that of a cock-bird, or whether (since he shows no desire to fight the reflected image) he is perfectly well aware that he only sees himself, it is difficult to say.

SOPHIE FRANKLAND

"Asia Minor" in the "Encyclopædia Britannica"

IN the article on "Asia Minor" in the new edition of the "Encyclopædia Britannica," in speaking of Tchihatcheff's "Asie Mineure," the writer says: "But those [vols.] which should have contained the geology and the archæology have never been published." As this may mislead some of your readers it may be worth recording the fact that the part on geology was published in 1867-69; and the palæontological division in 1866-69.

J. B. B.

Oxford

ON THE SOLUBILITY OF SOLIDS IN GASES¹

THIS investigation was undertaken in the hope that, by an examination of the conditions of liquid matter up to the "critical" point, sufficient knowledge might be gained to enable us to determine under what particular conditions liquids are dynamically comparable, in order that the microrheometrical method² (which the Royal Society has done one of us the honour of publishing in the *Philosophical Transactions*) might be applied to determine their molecular mass and energy relations. It seemed that as the laws relating to gases and liquids merge at what was called by Baron Cagniard de la Tour³ "l'état particulier," and by Dr. Andrews⁴ the "critical point," an examination of matter up to the limit of the liquid state would be likely to yield us much information. The time we have to devote to scientific work being very limited, we found that it was quite impossible to make much advance by using the apparatus devised by Dr. Andrews, as the time required to change from one liquid to another was more than we had at our disposal. We therefore devised a new apparatus, which will be described in a more lengthy communication, but which, we may state, can be opened, the liquid changed, and again closed for a new experiment, in about one minute.

The question as to the state of matter immediately beyond the critical point being considered by Dr. Andrews to be at that time incapable of receiving an answer, we imagined that some insight might be gained into its condition by dissolving in the liquid some solid substance whose fusing point was much above the critical point of the liquid, and noticing whether, on the latter passing its critical point and assuming the gaseous condition, the solid was precipitated or remained in solution. We found that the solid was not deposited but remained in solution, or rather in diffusion, in the atmosphere of vapour, even when the temperature was raised 130° above the critical point, and the gas was considerably expanded. When the side of a tube containing a strong gaseous solution of a solid is approached by a red hot iron, the part next the source of heat becomes coated with a crystalline deposit which slowly redissolves on allowing the local disturbance of temperature to disappear. Rarefaction seems to be the cause of this deposition, because if

¹ By J. B. Hannay, F.R.S.E., F.C.S., and James Hogarth. Read at the Royal Society, November 20.

² "On the Microrheometer," *Phil. Trans. Roy. Soc.*, 1879.

³ *Ann. Chim.*, series 2me, xxi. p. 127; xvii. p. 410.

⁴ "Bakerian Lecture," *Phil. Trans. Roy. Soc.*, 1869, p. 588.