be found on comparing pp. 191 and 313. On p. 191 we have a short abstract of an article on petroleum, by A. Riche and G. Halphen. On p. 313 we have a long abstract of the same article. In one case it is given under *qualitative* organic chemistry, in the other under *quantitative* organic chemistry. Yet the reference in each case is the same—"*J. Pharm. Chim.*, 1894, 30, 289." In this case, therefore, the abstracts are not even prepared from different journals.

I would suggest, then, that the first reform which the Editing Committee might institute in carrying out their scheme of retrenchment, should be one placing a limit on the number of abstractors who are to deal with one and the same article, even when it occurs in different publications. JAMES HENDRICK.

Glasgow, October 2.

Note on the Dendrocolaptine Species, "Dendrexetastes capitoides" of Eyton.

IT recently became necessary for me to examine some of the Dendrocolaptine birds in this museum, and among them the species named above. Our specimen, the type of the genus *Dendrexetastes* founded by Eyton in 1851, in Jardine's "Contributions to Ornithology," on a skin from an unknown locality, formerly in Lord Derby's museum, has evidently been examined by Dr. Sclater, for its label bears, in the well-known calligraphics of that distinguished authority on this group, the name *Dendrexetastes temmincki*. The difficulty I have in ascribing our specimen to that species is the cause of this note. According to the fifteenth volume of the "British Museum Catalogue of Birds," by Dr. P. L. Sclater, the genus contains but two species, *D. temmincki* and *D. devillii*, which, by his key on p. 140, are distinguished from each other, the former by having "blackish cross-bands" on the belly, and the latter having that region "uniform brown." On consulting Eyton's original description in the "Contributions to Ornithology," I can find no mention of any cross-bands on the belly; for there are none on the skin, which is apparently that of a mature bird. In looking up next the description by Lafresnaye, in the "Revue de Zoologie" for 1851, of his *D. temminckii*, to which Dr. Sclater has relegated as a synonym Eyton's *D. capitoides*, I read:—" . . . . pectoris ventrisque plumis totis umbrinis, in medio maculâ triangulari-elongata nivea nigro marginata notatis; ventris maculis strictis; fere linearibus; subcaudalibus pallide rufescentibus, albo late, fuscoque anguste vittatis. . . ." These words, as I interpret them, make no mention of the presence of cross-bands on the belly of *D. temmincki*, while the latter half of the quotation, in regard to the under-tail-coverts being pale rufous, with broad white and narrow fuscous spots, does not apply to *D. capitoides*, for the type-skin before me presents no such characters. The plate illustrating Lafresnaye's description of the first-mentioned bird (*loc. sup. cit.*) shows its breast-spots to be much narrower, though not linear, and shorter than those in *D. capitoides*, while the spots on the feathers on the upper part of the belly can hardly be termed "fere linearibus," which they are, however, in *D. capitoides*. The lower belly in the plate, "plumis totis umbrinis," shows, just as in the last-mentioned species, not a single cross-band. It would appear to me, therefore, that *D. capitoides*, Eyton, can scarcely be = *D. temmincki*, Lafr., while the latter differs from *D. devillii* (of which I regret our museum does not possess a specimen), and, I take it, from *D. capitoides*, by its smaller and narrower throat-spots. The subcaudal characters separate *D. capitoides* from *D. temmincki*, and apparently the typical *D. devillii* is separated from it also by the "striis strictissimis" of the breast, and the very linear shaft-stripes of the upper neck feathers. Is *D. capitoides* = *D. devillii?* Or are there three species? I incline to the opinion that there are. HENRY O. FORBES.

The Museums, Liverpool, October 8.

The Pressure of a Saturated Vapour as an Explicit Function of the Temperature.

IT may be of some interest to note that Cailletet and Mathias' "Law of Diameters," in combination with any equation of state, such as Van der Waals', which applies to the region of coexistence of liquid and vapour, supplies an (empirical) expression for the maximum pressure of a vapour at any temperature T in the form of an explicit function of this temperature and known constants.

Let p, v and T denote the pressure volume and absolute temperature of unit mass of the substance. According to Van der Waals' original equation of state, we have then :—

$$\left(p + \frac{a}{v^2}\right)(v - b) = \mathrm{RT}.$$

If v_1, v_2, v_3 denote the roots of this cubic in v, we have :—

$$v_1 + v_2 + v_3 = b + \frac{\mathrm{RT}}{p} \quad \ldots \ldots \text{(i.)}$$

$$v_1v_2 + v_2v_3 + v_3v_1 = \frac{a}{p} \quad \ldots \ldots \text{(ii.)}$$

$$v_1v_2v_3 = \frac{ab}{p} \quad \ldots \ldots \text{(iii.)}$$

Now, for any definite value of T less than the critical temperature, these equations give, when we put p equal to the maximum vapour-pressure corresponding to this temperature, three values, v_1, v_2, v_3, two of which (say v_1 and v_2) denote the volumes of unit mass of the substance in the states of saturated vapour and "saturated" liquid at this temperature. Accordingly, $\frac{1}{v_1}$ and $\frac{1}{v_2}$ denote the densities of the substance in these states, and the law of Cailletet and Mathias, above referred to, enunciates that the arithmetic mean of these densities can be very fairly represented as a linear function of the temperature. Therefore we can write :—

$$\frac{v_1 + v_2}{v_1v_2} = \phi\mathrm{T} \quad \ldots \ldots \text{(iv.)}$$

where ϕ denotes a linear function, whose two constants are known.

Eliminating v_1, v_2, and v_3 from the four equations (i.), (ii.), (iii.) and (iv.), we readily obtain :—

$$p = \frac{\mathrm{RT}(1 - b\phi\mathrm{T}) - a\phi\mathrm{T}\,(1 - b\phi\mathrm{T})^2}{b^2\phi\mathrm{T}} \quad \ldots \text{(v.)}$$

This result simply amounts to the following :—

If we fix the temperature T of a vapour, then the maximum vapour-pressure at this temperature is completely determined, *i.e.*

$$p = \mathrm{F(T)}.$$

Similarly the sum of the densities of saturated vapour and liquid in contact with it is determinate if T is fixed, and thus

$$\frac{1}{v_1} + \frac{1}{v_2} = \phi(\mathrm{T}).$$

Equation (v.) shows that the former function is known if the latter be known, and as Cailletet and Mathias have shown that the latter is very approximately linear, we can give the form of F(T).

This result, however, is not of any practical use unless the equation of state does really apply with good approximation to the region of liquid and vapour. F. G. DONNAN.

Holywood, Co. Down.

Colours of Mother-of-Pearl.

IN numerous text-books the colours of mother-of-pearl are included amongst phenomena of colour produced by striated surfaces, and though it is conceded that only a part of the colour is due to this cause, that part is generally assumed to be, at any rate, an appreciable quantity. Experiment will show, however, that such is not the case. When the colour produced by the striations is viewed in an impression of the pearl on sealing-wax or gelatine it is visible, though it is totally different in character from the iridescence of the pearl itself, in which the tiny contribution of colour from the striations is completely overpowered by that due to another cause. In white mother-of-pearl the striations are often as close together as in coloured varieties, and at certain angles, when viewed by light from a defined source, there is a little colour visible in the white specimens; just so much, and no more, is contributed by the striations of the coloured specimens, as may be shown by viewing a piece under the surface of water, when the effect of the striations is necessarily abolished, though the iridescence is not at all appreciably diminished. The whiteness of some varieties must be attributed to a different thickness or greater opacity of the laminæ. It is