

thunderstorms as explained in Prof. Silvanus Thompson's "Elementary Lessons," and similar elementary treatises:—

"The coalescence of small drops to form large ones, though it increases the electrical density on the surfaces of the drops does not increase the total quantity of electricity, and therefore cannot directly influence the observed potential."

Surely this entirely omits the fact that the capacity of a sphere is equal to its radius, and thus in the case of eight equal spheres coalescing into one (which is taken by Prof. Thompson), not merely would the density be doubled, but the potential of the same quantity would be increased four times.

In the well-known case given by Prof. Tait for the formation of a raindrop the potential of the same quantity might be increased fifty million times.

The source of the energy which is the cause of the increased potential in this case, is probably the molecular force of cohesion released during the act of condensation and union, the cohesion and the electricity being oppositely placed, so that while the former is running down hill (as it were) the latter is obliged to run up; the top of the hill answering to the critical moment for disruptive discharge.

In view of these facts, it seems to me that if the above sentence is not altogether erroneous, it is certainly ambiguous, and liable to breed false notions in the mind of the unreflecting and too credulous student. E. DOUGLAS ARCHIBALD.

Transparency of the Atmosphere.

It may be, I think, desirable to correct an error which has crept into all the accounts of the extraordinary transparency of the atmosphere observed here last week. It occurred on Sunday, the 8th, and not on Monday, the 9th inst. I can confirm the several details as to the objects visible to the unassisted eye. But in one respect this effect was surpassed on August 20, 1887, when the double flash of the Dunkirk light, distant from this place about forty-five miles, was visible for several hours. This light could not be seen here on the 8th inst.

Pavilion Hotel, Folkestone, July 16.

J. PARNELL.

Preserving the Colour of Flowers.

IN response to the inquiry of "A. W.," perhaps you will allow me to say that many years ago I met with Mlle. d'Angerville, the first lady to ascend Mont Blanc. She possessed the largest and best preserved collection of Alpine flowers I have ever seen, and she assured me she never used anything but cotton-wool in her press, changing it, of course, frequently. Her gentians, pedicularias, and other delicate plants were perfect in colour; and having tried her plan myself, although with less care, and therefore with less success, I still have Alpine flowers which have retained their colour for twenty years.

54 Doughty Street, July 17.

A. W. BUCKLAND.

Distribution of Animals and Plants by Ocean Currents.

IN connection with Miss Buckland's letter on this subject it may be interesting to note that, during a visit to Orotava, Teneriffe, in April 1887 (about the time mentioned by your correspondent), I observed and gathered a quantity of pumice-stone upon the seashore, the high tide mark being literally strewn with it. It seemed probable that it had been deposited there some weeks or possibly months previously, as, had there been any quantity floating about in the sea, I should have noticed it, being engaged at the time tow-netting in the neighbourhood and in the adjacent Canary Islands. There was no evidence of vegetable debris having accompanied the pumice, nor did I notice any pieces with barnacles attached.

Liverpool, July 13.

ISAAC C. THOMPSON.

A Curious Resemblance

WHILST walking by the sea on the cliffs last Sunday, I perceived at a distance of about 1500 yards a flight of nearly forty ducks, travelling at a good pace 2 or 3 feet above the level of the water. To me they appeared exactly what the so-called "sea-serpent" would, eight or ten of the birds flying close together and forming the head, whilst the rest trailed behind and formed the body and tail. At intervals they disappeared. This was caused, I think, by the birds changing their course

and flying either directly away or towards me; the former, I believe, in my case.

Some time afterwards I saw two other flights, and these resembled the first exactly, those with me also being surprised at their "snake"-like appearance.

W. J. LOCKVER.

Thanet, July 16.

The "Sky-coloured Clouds."

THERE was a very bright display of these clouds last night. I could not perceive anything of them up to 10 p.m., though the sky was clear, but by 10.18 they had become conspicuous, and were brightest, so far as I observed, near midnight.

I have seen very little account in any English paper of the visibility of these clouds beyond England, nor do I know whether they have been seen elsewhere than in Northern Europe. Has there been anything published on these points in English?

Neither have I seen any reference to the extensive observations of Herr O. Jesse at Steglitz, with his suggestions to observers. He considers it very important that this unusually favourable opportunity should be utilized for learning the motions of currents at great heights in the atmosphere. He suggests that photographs taken simultaneously from two places at a distance of say 20 kilometres would be useful for ascertaining the height of the clouds; and for this purpose the necessity arises of being able to calculate very accurately the azimuths and altitudes of different points in the photograph. Their height can likewise be determined, though less accurately, by observations of the limit of sunshine upon them. Herr Jesse proposes another way also, viz. by throwing an intense beam of electric light on the clouds; but I should doubt the practicability of this.

The direction and rate of motion could be best made out, he says, by the use of a cloud-mirror. The changes that take place in the forms of the clouds before they have moved far make it difficult to ascertain their motion accurately.

Herr Jesse further thinks the intensity of the light of the clouds in different positions should be determined; also that the sky should be examined in the day-time with a polariscope and photometer in the hope that the presence of the matter of the clouds, then invisible to the eye, might be revealed.

Sunderland, July 13.

T. W. BACKHOUSE.

An Unusual Rainbow.

SINGULARLY enough I can record the appearance of a rainbow after sunset similar to that described by Mr. S. A. Hill (NATURE, March 15, vol. xxxvii., p. 464). I was not aware there was anything unusual in it until I read Mr. Andrew's communication, or would have written to you about it. I do not remember on what day I saw the rainbow, but it was about the date of that observed by Mr. Andrew. I called my wife's attention to it, and attributed it to the brilliant glow of the sunset tints. It had a secondary bow, and Mont Kogie as a dark background.

British Consulate, Noumea, May 15.

E. L. LAYARD.

TIMBER, AND SOME OF ITS DISEASES.¹

IX.

IF the leaves are stripped from a timber-tree early in the summer, or during their young conditions in the spring, the layer of wood produced in the current year—and probably even that formed next year—will be poor and thin. This is simply a fact of observation, and does not depend on what agent deprives the tree of its leaves. Those oaks which suffered so greatly from the ravages of certain tiny caterpillars this last summer (1887)—many of them having all their leaves eaten away before July—will have recorded the disaster by a thin annual ring of wood: it is true the more vigorous trees produced (at the expense of what stores of food materials remained over) a second crop of leaves in August, and so no doubt the zone of wood will prove to be a thin double one, but it is at the expense of next year's buds.

¹ Continued from p. 120.