

appending any criticism on the admissibility or otherwise of this analogical piece of reasoning, we will simply narrate the results of putting the question to the test of experiment. When oxalate of lime was deposited in a gelatin plug between the poles of horseshoe magnets, "there was an extraordinary increase in the size of all the forms, crystalline and non-crystalline, where the plug or gelatin was subjected to the action of magnetism, but there was no production of new forms or greater tendency to sphericity." Similar experiments with a large electro-magnet yielded crystals which in several cases *appeared to have their axes slightly twisted*. This observation, if confirmed, and if presenting any assignable relation between the direction of magnetisation and that of the alleged axial twist, would be in the highest degree interesting. Up to the present moment, so far as we are aware, no crystal presenting tetrahedral dissymmetry or optically active in the polarimeter has been procured by artificial synthesis. Is it possible that Dr. Ord's observation contains the germ of the method by which we may hope to procure the synthesis, not of the active tartrates and sugars only, but of quinine and other alkaloids also? Experiments with electric currents were also tried, but proved less satisfactory, though the electrolytic actions set up produced several unexpected results.

Later chapters in Dr. Ord's book are devoted to renal and biliary calculi other than those mentioned—including a very singular case of an indigo calculus—and to a short scheme for the qualitative examination of calculi, which contains valuable hints to the general practitioner.

Concerning the production of the collospheres themselves there does not appear to be any one assignable cause. Harting dwells strongly on the influence of the "nascent" state in which the crystalloid body is deposited by double decomposition within the colloid. This term will probably fall out of use by chemists so soon as they perceive that it is a term convenient only as a cloak for ignorance. A more satisfactory point is made by Dr. Ord in the suggestion that there exists a relation yet undiscovered between hydration and the colloidal state; the hydrate of fresh uric acid being a colloid. Dr. Ord is of opinion that hydrated colloids and strong solutions of very soluble salts alike prolong the colloidal state of certain crystals, thus favouring the production of spheroids. Dehydration, which in certain cases appears to determine the production of spheroidal forms, is obviously inadmissible as the cause in the majority of cases. Nor does the difference of crystalline form between one crystal-system and another appear to affect the collospheric condition, in which absolutely no smallest modifications attributable to this possible cause can be detected. Solubility undoubtedly has much to do with the matter, since insoluble crystalline substances yield the best spheroids; but by evaporation and by deposition from hot strong solutions even sulphate of copper and ferrocyanide of potassium can be thus obtained. We must therefore fall back upon the conclusion that the one important factor in the production of the collospheric condition is the influence of the colloid. Mr. Rainey, who came to this conclusion, attributed this action to the "viscosity" or tenacity of the colloid fluid; and hence he associates with true colloids such substances as glycerine (which is a true crystalloid) and other viscid substances.

Dr. Ord, on the other hand, is disposed to regard the influence of the colloid as "a result of intestinal molecular movement inherent to the constitution of the colloid."

Arrived at this point, however, we cease to perceive any definite coherence between the various speculations which follow and in which the effects of pressure, of strain, and of hypothetical spiral waves, are mixed up with Brownian movements and chemical interaction. It is a pity that the all-important bearing of surface-tension at the boundary of two media, and of the elegant and instructive researches of Plateau, including his production of liquid spheroids, is not once alluded to, even in the remotest manner, by Dr. Ord. For our own part, we are disposed to attribute a very large portion of the influence which determines the production of these collospheres of solid matter to the same molecular actions as those which produce the surface-tensions between solids and liquids, and which cause the rise of liquids in capillary tubes and the production of liquid spherules in the experiments of Plateau.

In conclusion we must not omit to quote one experiment of Dr. Ord, that in which the rapid production of the collospheres is conducted under conditions suitable for lecture demonstration. A solution of pure urea of density 1.026 usually throws down shining white flakes of nitrate of urea on the addition of an equal bulk of strong nitric acid. If, however, a little egg-albumin be added to the urea solution before the nitric acid is added, spheres are formed of the greatest beauty, and appear "floating like snowballs" in the yellowish liquid.

OUR BOOK SHELF

A Guide for the Electric Testing of Telegraph Cables.
By Capt. V. Hoskiær. Second Edition. (London: E. and F. N. Spon, 1879.)

THIS very unpretentious but very useful little manual has reached a second edition, and now reappears with several valuable additions. In his original preface the author states that he does not expect an electrician to discover anything new in its pages. Be that as it may, the electrician will acknowledge the debt he owes to Capt. Hoskiær for the precision and brevity with which all his directions concerning the practical details of testing are given. Without philosophising or going into mathematical reasons of why and wherefore, he gives the necessary formulæ in the shape most useful for practical calculations; and the necessary tables of logarithms, trigonometrical functions, and temperature coefficients are sufficiently complete to save reference to other more extended works. The twelve lithographed diagrams leave nothing to be desired in point of clearness.

LETTERS TO THE EDITOR

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[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 Antiquity of Oceanic Basins

It seems to have escaped Dr. Carpenter's notice¹ that, in a Report on the results of the Deep-sea Dredgings of Mr. Pourtales

¹ Lecture before the Royal Institution, January, 1880.