The work of Mr. Whipple is an invaluable guide for the microscopical examination of potable water, in comprehensiveness and execution far surpassing all previous manuals of the subject in the English language, or for that matter in any other. It is also of great interest to the biologist, since it summarizes from literature not ordinarily gleaned the contributions of many workers on varions problems of freshwater ecology. It is to be hoped that this book will serve as a stimulus to all engaged in this field of applied biology to contribute to the solution of the many unsolved problems which their facilities and opportunities peculiarly fit them to attack.

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Analyse Chimique Qualitative. Par M.-E. POZZI-ESCOT. Paris, Gauthier-Villars.

This little book is instructive and valuable, as the author, instead of following the beaten track of qualitative separations, adopts mainly the methods of M. Ad. Carnot, and of Engel and Silva for metalloids. He gives especial attention to the detection of the rarer elements, utilizing methods of Cleve, of Wyronboff and Verneuil, and others.

Some of the methods of Carnot are rapid and give elegant results; the method of separating cobalt, nickel, iron, zinc, manganese, thallium, indium, and uranium, utilizing hydrogen peroxide may be particularly commended.

EDWARD RENOUF.

DISCUSSION AND CORRESPONDENCE.

DEFORMED STERNA IN THE DOMESTICATED FOWL.

THE fact that the keel of the sternum is frequently crooked in the domestic fowl has long been known to me, but until the publication of several papers either discussing the cause of this deformation, or bringing it forward as an instance of the inheritance of an acquired character, the reason for it had seemed quite evident. Now it may be that this is one of the cases where a thing is not so simple as it appears to be on the surface, but the primary cause for this curvature of the sternal keel has always seemed to me enforced flightlessness and consequent failure of the pectoral muscles to pull the sternum straight, while this may be aggravated by the feeding of corn which forms flesh, but not bone. Another factor would seem to be the effort to breed fowls that shall be heavy in flesh, attempting to increase the size of the pectoral muscles at the very time the sternum is diminishing in size from the disuse of these same muscles. Thus while the sternum as a whole is degenerating a larger keel is needed for the attachment of muscles and under these conditions the only way to obtain more surface is by the curvature of the keel. It has been remarked that thoroughbred fowls are more liable than others to have deformed sternal keels and these it may be noted are the very birds that get the least amount of exercise. The games, and other breeds not raised for flesh usually have straight sterna while the heavy-bodied Asiatics are particularly liable to have crooked sterna and it may be said that the same deformation often occurs among fancy pigeons bred for show and deprived of exercise by being cooped up in lofts.

That a deformation inconstant in direction and far from universal should not be regularly inherited is not surprising; that it is due to resting the breast on the perch, although this may be one of various causes, is doubtful; that cases where the deformation seems to be passed from mother to chick should be regarded as instances of the inheritance of an acquired character is even more to be doubted.

Finally it may be said that this twisting of the sternal keel is much greater in a dried sternum than in one that is fresh or has been soaked over night in water. Among the sterna of Great Auk collected in 1887 not one was straight, although they could be made straight by soaking and it is a difficult matter to find a straight keel on the dried sternum of a Murre or Razorbill.

F. A. LUCAS.

REMARKS ON THE LOESS IN NORTH CHINA.

ALTHOUGH there has been considerable discussion regarding the loess of North China, there are some facts which have not been presented with sufficient prominence, although mentioned by Pumpelly and others. In a trip of 450 miles

from Pekin into Mongolia by way of Kalgan, I observed the following facts:

(1) The loess is a wind deposit without doubt. Along the Tsing-ho, a river joining the Yang-ho near Kalgan, I found that all the north and south tributary valleys had slight deposits of loess in sheltered spots along both sides, and on the south or southeast slopes of the mountains. In the east and west valleys the north side of the valleys, that is the south slope of the mountains exhibited loess hundreds of feet steep, and clinging in sheltered spots to the very summit of the mountains more than 5000 feet above tide.

On the other side of these east and west valleys the loess deposits are practically wanting, except in gullies where there would be a lull in the wind.

The Chinese, who have overrun the Mongolian border, make use of this firm perpendicular cleaving loess for excavating houses which stand well. So the towns are usually found on the south or southeast slope of the mountains, where they have the loess to build in, or to build with, and also the sunny south exposure.

As a rule, depending on the local physical structure of the country, these deposits are rather more on the southeast than south side. In other words, the prevailing winds, then as now, blew from the northwest, down over the plains of Mongolia, the escarpment of which runs from northeast to southwest.

(2) In the valleys it often shows modification by water action. In the valleys and even half way up the mountains bands of rock fragments usually very angular are of common occurrence. These are of local origin and in all cases could be easily accounted for. They were either talus accumulations from the hill back of them, or else were deposited by some temporary stream which was formed by one of the sudden and terrific rains to which this section is subject during the summer months.

In one of the pits northwest of Kalgan there is a U-shaped deposit four feet across, of well-rounded gravel, some of the pebbles being three inches in diameter. It looks as if a stream of considerable size and superloaded with gravel from the hills near by had run over the loess at this point for a short time during the latter's period of deposition.

Lower down in the valley of the Yang-ho, 100 or 200 feet above the present river, especially where side streams have built up deltas at the point of emergence from the mountain passes into the valley, beds of sand, gravel and loess are interstratified. Probably this loess is material brought down either by the main river when it was at a higher level or by the side stream and deposited in slack water.

(3) There was some special period of rapid deposition, and that in quite recent time. Now this loess is everywhere deeply channeled by the little streams that are cutting it away. A very characteristic channel is one 20 to 30 feet, deep, 3 feet wide at the base, and from two to three times as wide at the top. Such miniature canyons will often be cut back a few hundred yards from the valley. Evidently this loess was deposited very rapidly at one time and then for some reason, probably lack of material, ceased to accumulate.

At present there is enough wind to do the work if it had the material at hand. Having been for seven hours in a dust and sand storm between Hsiian-Hua-Fu and Kalgan, I feel certain that the present wind forces are sufficient to deposit loess much more rapidly than it would erode away, provided it had the material. As it is the wind deposits now forming are entirely different from the loess. The drifts are in the same sort of places, but instead of being an impalpable dust are sand. At Hsiian-Hua-Fu the city wall is banked to the very top with drifts of sand, but no loess.

At some recent time the winds must have had an excessive amount of this peculiar fine dust at its command, and the dust must have come from the plains of Mongolia. Whether this material was supplied by glacial grist, furnished by glaciers coming down on to the Mongolian plains from the elevated mountain region to the northeast, or not, remains to be seen. One thing is certain. The glaciers never extended down to the edge of the Mongolian plateau in this region (Lat. 40° North).

(4) This deposit is very recent, for many of the smaller streams have not yet cut their way through it to the rock. This is in marked

contrast to the broad deep valleys in which the loess was deposited—valleys 3000 feet deep and 2 to 7 miles wide.

FRED. B. WRIGHT.

TIENTSIN, NORTH CHINA, May 30, 1900.

POWER OF THE EYE.

TO THE EDITOR OF SCIENCE: We often hear people say that they can merely by a steady gaze affect a person at a distance who is not looking at them; and some say that they are able to make one sitting in front turn the head in this way. Mr. Bell in his 'Tangweera' (p. 198) mentions this feeling when he says: "Presently I felt as if someone was looking at me, and, raising my head, saw a large puma standing ten yards off." To the physiologist it may seem uncalled for to investigate a manifest absurdity, but it has at least a practical value to explode a common error by direct experiment. I asked a young man, who is very confident of his powers, to stand, unknown to re-agent A, behind a book case, and look through a carefully concealed peep hole. I gave him the best opportunity, placing A about four feet from the hole and directly facing him, and I engaged A in mechanical writing. To the young man's confessed disgust and irritation he was unable to disturb A. My few experiments were negative in results. However, it may be that telepathic influence is exerted under certain conditions, and experiments with twins and others constantly *en rapport*, especially when under emotional stress and at critical junctures, might be worth trying. If there be nervous telepathy, this is, perhaps, as simple and common a form as any. If disturbance arose subconsciously the test would be that the tracings from an instrument to show nervous conditions should show large fluctuations coincidently with the times when the agent regards himself as successful.

HIRAM M. STANLEY.

CURRENT NOTES ON PHYSIOGRAPHY.

GLACIÈRES OR FREEZING CAVERNS.

A HANDSOME volume under the above title by E. S. Balch has just appeared (Allen, Lane and Scott, Phila., 1900, 337 pages, many illustrations). Nearly a third of the book is given to a narrative of personal experiences in visiting 'ice caves' or freezing caverns in various parts of the world. Fifty pages follow on the causes of subterranean ice; the first suggested and simplest explanation, the cold of winter, being held sufficient against a variety of legendary and fanciful processes. The prevalent belief that freezing caves are colder in summer than in winter and that ice forms in the warm season is controverted by direct observation. The reason for this curious perversion of fact is probably to be found in the temperature contrasts between cavern and external air in summer and winter; the cavern air feeling colder than the open air in summer and warmer in winter. Thermometric records show, however, that cavern temperature is relatively constant all the year round. The whole story is that cold air enters from the outside in winter time and produces ice when there is water to freeze. This simple explanation is confirmed by the occurrence of glacières only in regions where the winter has temperatures below freezing. A compendious list of glacières occupies 100 pages; abstracts of many opinions concerning them, 40 more; and a good bibliography and index close the volume. The views of the ice stalagmites in the glacière de Chaux-les-Passavant in the French Jura are excellent, and the book as a whole is highly creditable to American geographical scholarship.

THE OLD MOUNTAINS OF MICHIGAN.

MONOGRAPH XXXVI, U. S. Geological Survey, by several authors, treating of the Crystal Falls iron bearing district of the upper peninsula of Michigan, contains an instructive account of physiographic features amid a great body of geologic and economic details. The items here abstracted are from chapters by Smyth and Clements. Although the district is partly underlaid by resistant and deformed pre-Cambrian rocks of diverse structures, and partly by weak and gently inclined upper Cambrian sandstones, the most general aspect of its surface is that of a somewhat rolling plain with a gentle and uniform descent for about thirty miles from an altitude of 1800–1900 feet in the northwest to 1200-1300 in the southeast. The areas of harder rocks form broad swells of moderate relief, but