

but the manner in which a number of elements group themselves together and form a complexus." Thus it follows that "a rich and extensive memory is not [merely] a collection of impressions, but [also] an accumulation of dynamical associations, very stable and very responsive to proper stimuli."

The essay then proceeds to consider more especially the case of conscious as distinguished from organic memory:—"The brain is like a laboratory full of movement, where thousands of occupations are going on at once. Unconscious cerebration, not being subject to restrictions of time, operating, so to speak, only in space, may act in several directions at the same moment. Consciousness is the narrow gate through which a very small part of all this work is able to reach us. . . . What has been said of physiological memory applies in a general way to conscious memory; only a single factor has been added." But "dynamical associations have a much more important part to play in conscious memory than in unconscious memory."

These we think are the more important of M. Ribot's preliminary considerations. We have no space to consider others which follow, or to enter into the details of those diseases of memory which constitute the main subject of his work. These diseases are classified under the divisions of General Amnesia, Partial Amnesia, and Exaltations of Memory. Each of these divisions is abundantly illustrated by examples, which, while being adduced in corroboration of philosophical views on the mechanism of memory, furnish in themselves reading of a curiously entertaining kind. We may conclude by rendering, in the words of the author's own summary, the general conclusions which he deems his study of the diseases of memory to have established:—

"1. In cases of general dissolution of the memory, loss of recollections follow an invariable path; recent events, ideas in general, feelings, and acts.

"2. In the best-known case of partial dissolution (forgetfulness of signs), loss of recollection follows an invariable path; proper names, common nouns, adjectives and verbs, interjections, gestures.

"3. In each of these classes the destructive process is identical. It is a regression from the new to the old, from the complex to the simple, from the voluntary to the automatic, from the least organised to the best organised.

"4. The exactitude of the *law of regression* is verified in those rare cases where progressive dissolution of the memory is followed by recovery; recollections return in an inverse order to that in which they disappear.

"5. This law of regression provides us with an explanation for extraordinary revivification of certain recollections when the mind turns backwards to conditions of existence that had apparently disappeared for ever.

"6. We have founded this law upon this physiological principle: Degeneration first affects what has been most recently formed; and upon this psychological principle: the complex disappears before the simple, because it has not been so often repeated in experience.

Finally our pathological study has led us to this general conclusion: Memory consists of a process of registration of variable stages between two extreme limits, the new state, the organic registration."

GEORGE J. ROMANES

EASTERN ASIA

Im Fernen Osten, Reisen des Grafen Bela Szechenyi in den Jahren 1877-1880. Von Gustav Kreitner, Mitglied der Expedition. Two Vols. (Vienna, 1881.)

AFTER rambling for more than three years over a great part of Japan and China, the forerunners of Count Szechenyi's party reached the Irawadi delta in March, 1880, in such a plight that they were actually refused admission to Jordan's Hotel in Rangoon. The expedition was undertaken, not to seek the cradle of the Magyar race in Central Asia, as was given out at the time, but simply to seek distraction from a heavy domestic affliction experienced by the Count in 1876. It was organised with the disregard of economic considerations so characteristic of the open-handed Hungarian nobility, and consisted originally of four members—the Count, Balint de Szent Kotolna, philologist, Ludwig von Loczy, geologist and Gustav Kreitner, geographer. Unfortunately Balint got no further than Shanghai, where his health completely broke down. Hence the linguistic results were *nil*, notwithstanding the sensational story circulated in some American papers regarding a Magyar-speaking nomad tribe said to have been discovered in the Gobi desert. These marauders were stated to have captured and condemned the whole party to death. But on overhearing them casually exchange a few words in Hungarian, the nomad chief, overcome with emotion, fell on his knees, and addressed Count Bela "in the purest Magyar," acknowledging him and his associates as their long-lost brethren, descendants of the warlike hordes, who migrated westwards ages ago, but whose memory was still kept alive in the yurts of their Asiatic kinsmen. This story throws a curious light on the analogous statements long current in popular writings touching the Irish, Welsh, and Basque-speaking Delawares, Algonquins, Guaranis, and other American aborigines. The only difference is that in these critical times such veracious accounts have no longer much chance of surviving their authors.

The expedition has found a competent historian in its geographer, Gustav Kreitner, whose chief fault is perhaps an excessive Teutonic conscientiousness, which omits nothing, and leaves little to the imagination of the reader. Hence these bulky volumes, mostly going over tolerably beaten ground, are apt to grow all the more tedious that the journey was on the whole singularly free from stirring adventures. The camp was broken into and looted during the night by some prowling Tanguts in Mongolian Kansu; a terrific sandstorm nearly overwhelmed the caravan on the skirt of the Gobi; Herr Kreitner on one occasion got entangled in the intricacies of the loess region in North China; an attempt to penetrate into the precincts of a Buddhist monastery at Batang was met by a shower of stones from the doughty but inhospitable llamas; lastly the train conveying the explorers from Prome to Rangoon narrowly escaped the flames of a burning jungle in Pegu. But there was little else to record of an exciting character, beyond the ordinary incidents, mishaps, and hardships of eastern travel.

On the other hand many opportunities were afforded for original observations on the lands and peoples visited by the expedition, which has certainly materially increased

the stock of our information on oriental matters. In Yesso the Ainos were carefully studied by Herr Kreitner, whose independent testimony fully confirms this writer's views regarding the Caucasian affinities of those aborigines. "That the Ainos have nothing in common with the Japanese and Chinese is evident even from a cursory glance. The cranial formation is nobler, the forehead higher and broader, the prominent nose firmer. But it is the horizontal position of their large brown eyes that more especially assimilates them to the Caucasian type" (p. 318). A minute examination of the hair resulted in the curious discovery that its seeming abundance is due rather to its coarse texture than to its denser growth on a given square surface. In this respect it appears to be inferior even to that of the Japanese, at least on the scalp, while the body is on the other hand covered with a fur coat averaging 40 millimetres in length, and in the ratio of about 30 hairs to the square centimetre. The contradictory statements regarding the Aino complexion were shown by a practical experiment to be due to the more or less grimy state of the subjects examined. "The more I rubbed the lighter became the dark colour of the Aino, and the browner grew my hand. How often has the complexion of this race been described as darker than that of the Japanese, by those who forget to apply the test of soap and water!" (p. 296).

In this thoroughly practical spirit many other controversial points, doubts, and mystifications were cleared up. The colour of the "button" on the Mandarin's cap is commonly supposed to indicate official rank. But "such is not the case. It is a mere decoration or order. Very frequently we noticed Mandarins with the red button (first and second mark of distinction) taking his place after others decorated with the blue (third) or even with the gold (eighth) button" (p. 190). In the same way by a series of shrewd calculations based on a few given data it is plausibly shown that the population of China has been enormously over-estimated, and that instead of 300 or 400 millions it does not probably exceed 150,000,000, or 100,000,000 less than that of British India! (p. 556). In connection with this point, the opium question raised by over-zealous missionaries and political free-lances, is demonstrated to be a pure bogus. The practice, not always injurious, and in certain fever-stricken districts positively beneficial when kept within moderate bounds, would seem to be indulged in by not more than 850,000-900,000 altogether. The inveterate opium smokers are reduced to about 700,000, or not much more than $\frac{1}{2}$ per cent. of the whole population, taking it even at its lowest estimate.

Archæologists will rejoice to hear that the famous Nestorian monument of Signan-fu, hitherto reported as "lost or missing" since the Panthay rebellion, has been re-discovered by our explorers. For a time neglected and overlooked during those terrible times, it has been recently set up in a place of honour within the precincts of a Buddhist monastery to the west of the city. Three impressions of the well-known inscription were taken, together with a copy of another which has lately been added to the reverse side of the slab, and which runs thus: "A pious Mandarin caused this stone to be restored over twenty years ago, and set up where it now stands." In the same neighbourhood a brick inscribed with the

symbol of the Han dynasty was also obtained from a pagoda said to be over 2000 years old.

From Sining-fu an excursion was made to the monastery of Kum-bum, partly for the purpose of testing Huc's extraordinary account of the famous tree of Buddha. The result must be told in the author's words:—

"A few steps brought us to the chief temple. Before it stood, surrounded by a railing, the tree concerning which the Abbé Huc tells us that its leaves bear the natural impress of Buddha's likeness and of the Tibetan alphabet. We sought in vain for such phenomena. Neither image, nor letters, but a waggish smile playing about the corner of the mouth of the elderly priest escorting us. In answer to our inquiries he informed us that *a long time ago*, the tree really produced leaves with Buddha's image, but that at present the miracle was of rare occurrence. A few God-favoured men alone were privileged to discover such leaves. The last so favoured was a pious Mandarin, who visited the monastery seven or eight years ago. Next day Count Szechenyi succeeded in finding a leaf on which a rude likeness of Buddha had been etched, probably with some acid. The llamas allow no one to pluck leaves or blossoms from the tree, and the leaves that fall are carefully collected and sold to the pilgrims as a specific against affections of the larynx. The tree belongs to the Oleaceæ, and I believe it to be *Syringa L.* (white lilac), which in all probability reached Europe originally from China" (p. 708).

A careful survey was made of the vast region of "yellow earth," to which a total area of at least 360,000 square miles is assigned in the Hoang-ho basin. The origin of this unstratified loess formation is assigned with Richthofen to the weathering of the rocks on the lofty Tibetan plateaux, combined with the prevailing west winds, by which the pulverised particles are wafted eastwards. From a rough calculation of the rate of the deposit, which in Shensi was found to attain a thickness of 1800 feet, a period of at least 260,000 years is supposed to have been needed to remove the detritus from the plateaux to the lowlands.

One of the most cherished objects of Count Szechenyi was to reach Lhassa from the east or north-east. But like Prejevalsky, Gill, Desgodins, and so many other recent explorers, he was baffled all along the Tibeto-Chinese frontier line from Kuku-Nor to Batang. Hence no new territory was anywhere traversed except a small district south of Batang on the road to Tali-fu. Here a fresh route was struck across the Chung-tien plateau, which occupies the extreme west of Se-chuen, within the great bend of the Kinsha-kiang. In this Alpine region several altitudes were taken, some new wild tribes were visited, but no opportunity was afforded of throwing any fresh light on the many interesting hydrographic problems which still await solution in South-East Asia. At Tatsien-lu these problems formed a chief topic of discussion with the Abbé Desgodins, who has probably more practical knowledge of the subject than any living European. The question was again approached during the now familiar route from Tali-fu to Bamo across the narrow, gorge-like valleys of the great Indo-Chinese rivers. The result of these discussions and observations is set forth in the accompanying map of China and East Tibet, which substantially adheres to the lines already laid down on D'Anville's map, prepared in 1735 on data previously collected by the Jesuit missionaries in China. Here the Sanpu appears as the upper course of the

Brahmaputra; the Great and Little Irawadi, forming the two upper branches of the main Burmese artery, are carried through the unexplored Pomi country as far as 32° N.; while the Lu-Kiang (Salwen) and Lantsan-Kiang (Me-Khong) are both traced still higher to 34° N. 92° E. within a short distance of the Murui-ussu (Yangtze-kiang) valley. Thus the basins of five of the great Asiatic streams are crowded at one point into a narrow space of less than 280 miles, where the several water partings are formed merely by a series of lofty ridges following in rapid succession between Sechuen and East Assam. Such a hydrographic disposition is of course elsewhere absolutely unparalleled, and is altogether of such a phenomenal character that it can hardly be finally accepted until the main rivers are actually traced to their respective sources.

The jealousy with which the Tibetan frontier is everywhere guarded Herr Kreitner is disposed to attribute rather to the Lbassa than to the Pekin authorities. The Chinese government is represented as possessing very little practical power in Tibet, which is gradually becoming a sort of fee simple of the Sacerdotal class. The Dalai-lama himself is a mere puppet in the hands of this priestly caste, which has set up no less than 103 living Buddhas altogether, and which now embraces two-thirds of the population of Tibet, grinding the rest to dust, and living in opulence, idleness, and profligacy on the contributions of the countless devotees who periodically visit the vast monastic establishments overshadowing the land. The whole trade of the country is monopolised by the llamas, "who buy in the cheapest and sell in the dearest market," and whose efforts are steadily directed against the intrusion of all foreign competition. These llamas are the greatest curse that ever afflicted an ignorant and superstitious people, plundering and oppressing them in their combined capacity of sorcerers, priests, traders, money-lenders, serf-owners, and landed proprietors. "No Tibetan peasant claims as his own the land he tills, or the house he builds. All is held at the will of the llamas, who eject him whenever he dares to brave their displeasure. And in the power, rapacity, and boundless authority of these priests must be sought the impassable barriers which have hitherto encircled the whole land. By them is Tibet closed to the outer world, and by them will it long remain hermetically sealed" (p. 855).

The work is abundantly illustrated by original woodcuts, which, if not always remarkable for artistic merit, are at least always to the point. It is also unfortunately disfigured by several mis-statements and inaccuracies, some of which are quite unaccountable. Thus the length of the Suez Canal is given at 80 instead of 100 English miles. The Wahhabis are brought to the west of Mecca, where they have never been seen since their overthrow by the Egyptians in 1819. Harakiri and other customs, legally abolished since the Revolution of 1868, would appear to be still practised in Japan. The Shogun is still the "Tykun," while the Mikado, representing the oldest monarchy in the world, is said to have sprung "from the Kubo (Shogun) dynasty, founded in 1603"! Shintoism is described in one place as "a Buddhist sect," and in another, although rightly called the original national religion, it is wrongly said to be now mostly superseded by Buddhism and the Confucian moral

system. The upper course of the Yangtze-Kiang, we are told, is called the "Murui-ussu" by the Tibetans, who certainly do not speak Mongolian. The Tibetans themselves are stated to be called "Si-fan" by the Chinese, and at p. 831 the extraordinary statement is made that Tibet "ist leblos auf Thierwelt," the very opposite being notoriously the case.

A. H. KEANE

OUR BOOK SHELF

Die Insekten nach ihren Schaden und Nutzen. Von Prof. Dr. E. Taschenberg. Mit 70 Abbildungen. Pp. 1-300, 8vo. (Leipzig: G. Freytag, 1882.)

THIS forms the fourth volume of a German series of popular works issued under the title "Das Wissen der Gegenwart." It consists of an examination of certain insects injurious, or otherwise, in field, garden, and forest. The author is a man of scientific training, and as a specialist has acquired that practice of accuracy of statement that necessarily results from the education of a specialist. Much of the contents will prove useful to Englishmen who can read German; a portion, however, concerns insects that happily do not occur with us. The figures are mostly very good, many are excellent a few are indifferent. We recognise most of them as reproductions, or reductions, from varied sources. The "Colorado Beetle" is introduced, and appears somewhat strangely out of place in a work that almost exclusively concerns German insects. Possibly the opportunity for indulging in a little satire (p. 124) may form sufficient excuse. But the author aims his satire at the wrong butt. He alludes to newspaper reports as to Colorado beetles having been sent over by Irish Americans, in order to spite "Englanders," but omits to suggest that the "scare" existed long before these newspaper reports.

Out in the Open. A Budget of Scraps of Natural History gathered in New Zealand. By T. H. Potts, F.L.S. (Christ Church, 1882.)

THIS little volume contains a reprint of a number of interesting papers contributed by the author from time to time to the *New Zealand Country Journal*. These chiefly relate to the ferns and birds of the country, but comprise also an account of a visit in 1878 to Hikurangi, where the Maoris were seen at home. In another paper a good account of the Kia (*Nestor notabilis*) is given. It would seem that it does not do much damage to the flocks of sheep except during periods of severe snow, when the parrots are deprived of their usual food. The work is evidently the result of a good deal of intelligent observation carried on over a number of years.

Catalogue of Mammalia in the Indian Museum, Calcutta. By John Anderson, M.D., F.R.S. Part I. (Calcutta: printed by order of the Trustees, 1881.)

THIS part contains the Primates, Prosimidæ, Chiroptera, and Insectivora of the Indian Museum, Calcutta. Till 1865 this Museum was the property of the Asiatic Society of Bengal, and a catalogue of the mammalia therein was drawn up in 1863 by the late Edward Blyth, so well known to all Indian naturalists of that period. The collection has increased enormously since, from in 1863 150 species of the four orders catalogued by Dr. Anderson to 252 at present existing in the Museum of these same orders. Extensive and important details are given about many of the more remarkable species, especially the Primates. The synonymic lists seem well worked out, and this part will have a value for the working naturalists far beyond that of a mere catalogue. We trust the second part will soon be published, and we congratulate the Trustees on the excellent work done by their superintendent.