

due attention from the officers of that survey. It is well known that important explorations have been carried on in other portions of the vast territories now under the rule of the Khedive, and it may be hoped, in the interests of science, that these results may be published with less delay than those we have now been noticing.

J. W. J.

EXPERIMENTS ON HUMAN MONSTERS.

Essai sur la Psycho-physiologie des Monstres Humains. By N. Vaschide and Cl. Vurpas. Pp. 294. (Paris: F. R. de Rudeval, n.d.) Price 5 francs.

THE substance of two-thirds of this book has already appeared in various scientific and medical journals. The last ninety-four pages are devoted to the researches of other workers in the same field. The first of the two monsters examined by the authors was an anencephalous male child, which was continuously under observation during the thirty-nine hours of its extra-uterine life. An examination *post mortem* revealed the complete absence of cerebral hemispheres, cerebellum, pons, restiform body, inferior and accessory olives, and pyramidal tract. The monster's apparent lack of taste and smell is devoid of theoretical interest, as the authors omit to mention whether the trigeminal and olfactory nerves were developed. Certainly they failed to find traces of the third and fourth cranial nerves, coincident with the lack of which the infant presented exophthalmos, external squint, dilatation of the pupil, absence of the pupil-reflex, and ptosis. The cerebral hemispheres were replaced by a protruding cystic tumour; throughout the brain and cord the ependyma, neuroglia and ventricles were much hypertrophied, and atrophied degenerated nerve-cells were met with, especially in the cranial region, together with much vascular engorgement and diapedesis. In order to explain the yet healthy state of the retinae and optic nerves, the authors conclude that the cerebral hemispheres at first developed normally, and were only later affected by "an inflammatory process of an infectious nature," which produced the anencephaly and other abnormalities. But the authors' interpretation of their histological investigations is far from convincing. It is hardly a matter for surprise to find hæmorrhages and wandering leucocytes in the profoundly disturbed nervous system of a cold, moribund, cyanotic creature that breathed only about eight times a minute, and then with a well-marked Cheyne-Stokes rhythm. Moreover, some secondary degeneration may have followed from the complete absence of the pyramidal tract. The authors allude to an insufficiency of myelinisation and to the abnormal proportions between white and grey matter. But these statements, and the rather indifferent plates and illustrations upon which they are founded, would have carried greater conviction, were it certain that the authors (of whom one is an experimental psychologist and the other a hospital resident physician) are perfectly familiar with the corresponding appearances in a healthy newly-born babe.

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On pp. 47 and 48 we read:—

"It seems that a class of psychic phenomena, which hitherto have been attributed exclusively to the cerebral hemispheres, such as the special sensibility to touch, pain, and warmth . . . existed in our anencephalous subject independently of the action of the brain."

In point of fact, the reflex movements experimentally obtained by tactual, painful, and thermal stimuli, likewise the abortive attempts of the subject to swallow, its cries and convulsive seizures, one and all are just what might have been expected from a "decerebrate" vertebrate; they are quite void of "psychic" significance in the ordinary meaning of the term, and throw no fresh light on the subject whatever. Surely the presence of these reflex actions, and the integrity of the nerve-trunks, might have led the authors to suspect that nerve-cell degeneration had been neither as extensive nor as intense as they had imagined. But, on the contrary, they incline (p. 76) "to the opinion of certain authors who see in the cell a centre having a function purely trophic and in no way motor," and further urge (p. 75) the impossible view that the infant's (very doubtful) manifestations of spontaneous activity "seem to show that the pyramidal tract has a rôle essentially inhibitory instead of dynamogenic." The authors might to their advantage have kept in mind the words of their own preface (p. 16):—

"Nous avons laissé à dessein de côté dans nos travaux et recherches les hypothèses, . . . en nous imposant de ne pas sortir du cadre de l'expérience et des données précises."

The subject of the second far more satisfactory study was a "xiphopage," as the authors call it, in other words, an example of Siamese twins. It was composed of two perfectly formed Chinese boys, fifteen years old, of whom the right was called Liao Toun Chen and the left Liao Sienne Chen. They were united in the region of the xiphoid part of the sternum by a somewhat extensible bridge of tissue which contained cartilage, blood vessels, and very probably a remnant of hepatic substance. This bridge revealed a narrow median anæsthetic zone, surrounded on either side by a hypoæsthetic zone, cutaneous stimulation of which affected only that individual to whom the stimulated area was nearest, but never both individuals. It is, however, difficult to reconcile this interesting observation with another, viz. that if the points of Weber's compasses were separated by 15mm., and the compasses placed astride the median anæsthetic zone, so that one point rested on an area felt by one subject, and the other on an area felt by the other subject, then each child perceived that he was touched in two points. The characteristics of the two children were very different. Liao Toun Chen was mentally and physically more vigorous than his brother. He was more curious and roguish, while Liao Sienne Chen was more attentive and serious. The latter, as we should expect, gave shorter and more trustworthy reaction-times. His sensibility to stimuli was also keener. His body-temperature and his arterial pressure were higher than those of his stronger brother, who in turn breathed with greater rapidity, and had a more frequent pulse. Save in

violent emotion, the respirations of the two brothers were never isochronous, but in opposite phases. Owing to congenital association, these differences of character were found to be harmonised, as might be anticipated, in action. Quarrels were rare; Liao Sienné Chen meekly followed his better half. They had from their birth eaten and performed other functions simultaneously. In waking, however, one recovered consciousness before the other, and roused him. It was found possible for one of the brothers to sleep while the other kept awake. But does this in reality, as the authors affirm (p. 175), "speak singularly against a chemical theory of sleep which makes it appear under the influence of toxic products"?

C. S. MYERS.

OUR BOOK SHELF.

Electrolytic Preparations. By Dr. Karl Elbs, translated by R. S. Hutton, M.Sc. Pp. xi + 100. (London: Edward Arnold, 1903.) Price 4s. 6d. net.

ELECTROCHEMICAL methods are now becoming of such importance, and are being so largely employed both in the laboratory and in technical processes, that the translation of Dr. Elbs's little work on electrolytic preparations—"Exercises for use in the laboratory by chemists and electrochemists"—will be sure to be welcomed by English-speaking students.

The book is divided into two parts. Part i., which is general, deals with sources of current and connections, resistances, apparatus for electrolysis, &c. Dr. Elbs considers that accumulators can alone be looked upon as a source of current for laboratory purposes, and he gives some useful hints as to coupling up and how to use the cells.

Several pages are devoted to apparatus for electrolysis. As kathode material almost any metal may be employed, unless the electrolyte is very strongly acid. But for anodes, nearly all metals, with the exception of platinum, are attacked. Lead may often be used owing to its becoming coated with a superficial layer of peroxide which prevents further action taking place.

Part ii. is devoted to the experimental portion of the work. The examples from inorganic chemistry which come first are divided into two parts. The first deals with experiments with unattackable anodes, the second portion with soluble anodes. Under the first heading are given the methods of preparation of such substances as chlorates, bromates and iodates, and persulphates, under the second heading the preparation of white lead, cuprous and cupric oxide.

On p. 47 the student is introduced to the electrolysis of organic acids. This part is well arranged, and the theoretical principles are carefully and clearly gone into. A detailed explanation is given of the various reactions which may occur in the electrolysis of organic acids. Here there seems to be a field for further research, because although many of the explanations given probably approximately explain what actually does occur, others seem hardly conclusive, so that at any rate further light upon the subject would be welcome.

No less than eighteen examples of electrolytic reduction are given, while there are only two on electrolytic oxidation. This is mainly due to the fact that reduction work, generally speaking, is much easier to carry out than work on oxidation. This applies both to pure chemistry and to electrochemistry. Further, electrochemical methods of oxidation have

not been tried by chemists to anything like the same extent as have reduction methods.

The book is very well printed and got up, and Mr. Hutton has done his part—the translation of the work—very satisfactorily. F. M. P.

A Concise Handbook of Garden Flowers. By H. M. Batson. Pp. vii + 256. (London: Methuen and Co., 1903.) Price 3s. 6d.

THIS is an alphabetical list of a large number of ordinary garden plants, together with brief indications of height, colour of flowers, native country, natural order, season of flowering, mode of propagation, and purpose for which they may be used in the garden. Within its rather restricted limitations the book seems carefully compiled, and the proofs have evidently been read with attention, for abundant as are the opportunities for falling into error, misprints are hardly to be found. The word "family" is, however, used in many cases where "genus" should be employed; thus the Galegas are styled a hardy family. Of course, Galega is a genus of the family Leguminosæ. An even more misleading statement is that in which *Narcissus Barrii* is spoken of as "a family of star-narcissus," whatever that may be.

The cultural details, though very concise, are apparently trustworthy, but there is ample room for difference of opinion about these matters. Thus the author says of *Gentiana acaulis* that "it is easy of culture." It may be so in places, but after a long experience with it under varying conditions, but in one particular garden, we have never been successful in getting it to flower, whilst in another we have experienced no difficulty. The author has succeeded in finding English names for most, if not all, of the plants he mentions. If such names are to be given, they should be employed with as much precision as the technical appellations. To call *Narcissus poeticus* the "poet's daffodil," or *Narcissus Tazetta* "the polyanthus flowered daffodil," is surely to introduce confusion where none need be experienced. A full index is added, which adds greatly to the convenience of the reader. We should like to suggest to the author that, in a future edition, he should enumerate the names of the genera in alphabetical order under the heading of the natural order to which they belong. Search for the name of a plant would by such means be much facilitated, as most lovers of plants are familiar at least with the principal natural orders.

Lavori marittimi ed Impianti portuali. By Flavio Bastiani. Pp. xxiv + 424. (Milan: Ulrico Hoepli, 1903.) Price 6.50 lire.

THIS is one of the "Manueli Hoepli," a series of pocket books in which the Italian "man in the street" can, at a small cost, obtain information on such diverse subjects as elliptic functions, Volapük, botany, oils and olives, Greek mythology, and English weights and measures. The present volume deals with the construction and working of docks, harbours, wharves, canals, lighthouses, in short all fixed structures connected with navigation. It is illustrated by 209 woodcuts, and the last part contains a summary of Italian laws relating to harbours, harbour dues, and such matters.

Il Moto degli Ioni nelle Scariche elettriche. By Augusto Righi. Pp. 66; with 3 plates and several woodcuts. (Bologna: Nicola Zanichelli, 1903.)

THIS book contains, with some amplifications, an almost verbatim report of a lecture delivered by Prof. Righi to a branch of the Italian Electrotechnical Society at Bologna. It deals with the theory of electrons, considered with special reference to cathodic rays, ionisation of gases, Lorentz's theory, and the production of electric shadows.