

from the very comprehensive and long list of exhaustive experiments recorded in this great work.

The "Thanatophidia of India" shows that there are about twenty families of ophidia found and described in this country, with a considerable number of genera and species known to naturalists; of these only four families are poisonous. But among these are some of the most deadly snakes. The leading and principal forms have been illustrated in this work. A description of each has also been given, with an account of the action of its poison on man and the lower animals. The illustrations have been made from coloured drawings executed in the School of Art at Calcutta; and it is not saying too much when we declare, that the drawings reflect the highest credit and honor on Mr. Locke, the able and accomplished Principal of this excellent institution. The existing specimens of living reptiles belonging to the poisonous families may at once be identified by reference to the species figured in the initiatory pages of Dr. Fayer's book. So perfectly have the lithographs been prepared from the drawings made by the students under the control and direction of Mr. Locke, that the merest tyro in natural history may without difficulty recognize any of the snakes pictured in the work. This, we take it, is one of the charms of the book. Besides the plates of the different poisonous snakes, three others are furnished illustrating the method of handling them during the conduct of experimenting with the poison on the lower animals; the muscular apparatus employed for erecting the poison fangs; the anatomy of the fangs and of the head generally.

The letters-press opens out with a general description of the zoological and anatomical characters of the thanatophidia, and the effects of the poison, which appears to exert a varying influence upon the blood. Thus, at page 4, we learn that the poison of the *naja* kills without destroying the coagulability of the blood; whilst that of the viper—the *daboia*—produces perfect and permanent fluidity in the lower animals, though this is not apparently so in man in all instances. "The poison may be diluted with water, or even with ammonia or alcohol, without destroying its deadly properties. It may be kept for months or years, dried between slips of glass, and still retain its virulence. It is capable of absorption through delicate membranes, and therefore it cannot be safely applied to any mucous surfaces, though, doubtless, its virulence is much diminished in the endosmosis. It kills when introduced into the stomach, when put into the eye, or when applied to the peritoneum."

Then follows an elaborate description of the natural history of the poisonous snakes, in which Günther, Jan, and other eminent ophiologists are freely indented upon, whilst much new matter is recorded from Dr. Fayer's own large and varied experience. Here, as in every portion of this magnificent work, full credit is given to all who, either by their writings or personal assistance, have contributed to help the author in his important researches. Among these we may specify, as belonging to the foremost rank, Dr. John Anderson, the able Curator of the Imperial Museum; Dr. Stolickza, the Palaeontologist of the Geological Museum; and Mr. Ball, of the Geological Survey of India.

The treatment of snake-bites is a vitally important section of the work. Here we are told that snake-poison produces fatal or deliterious effects, either by completely paralyzing the nerve-centres, and thus causing rapid dissolution, or by partially paralyzing them, and poisoning the blood, thereby inducing pathological conditions of a secondary nature, which may, according to circumstances, cause the slightest or the most dangerous symptoms. Snake poison is a neurotic, and when it takes full effect, it kills, by annihilating in some unknown way, the source of nerve force. It is also an *irritant*, producing rapid and violent inflammation of mucous membranes; and a *septic*, causing, in animals which survive small quantities of the poisons, local sloughing, and, it may be, subsequent septicaemia. It acts by absorption, thus entering the circulation, and so reaching the great nerve-centres, producing either death, or severe local and constitutional symptoms, according to the quantity or intensity of the poison.

Suggestions are made for the immediate treatment of persons bitten by venomous snakes, for the guidance of police officers and others; and we regard these as being of such vital importance that they ought to be translated into every vernacular language of the country, and freely distributed throughout the length and breadth of the land. Were this done, many valuable lives might be saved. Decision and promptitude, in no department of medicine, are so essentially necessary as in the management of a case of snake-poisoning. Time lost, in such a case, is irretrievably fatal. The loss for a second or a fraction of a second, in applying a ligature between the seat of the

wound through which the poison has been injected, and the heart, with a view to prevent or retard absorption, may make all the difference between certain death and recovery.

The work is concluded with a long series of experiments on warm and cold-blooded animals—from the horse to common snail. The result is, that when once the poison of any of the venomous snakes in India has been injected into the tissues beneath the skin, or into any of the venous channels of the body, death is almost invariably the consequence. Every reputed antidote has been patiently examined and subjected to a fair trial, and the issue has invariably been to show that they are all equally valueless and powerless to counteract the deadly action of the poison of the snakes of this peninsula. Even the hypodermic use, or the intravenous injection of ammonia in large quantities, has proved inefficacious in modifying or influencing the fatal result. Nay, the poison has been mixed with ammonia, and ammonia has been injected into the veins beforehand; but the effects of the poison have just proved as mortal as if no ammonia had been used at all. If Dr. Fayer has not yet succeeded in discovering an antidote for snake-poison, he has rendered admirable service in the cause of science by adding to our knowledge much that was before altogether unknown; and cleared the ground hitherto obscured by empiricism and error. The medical profession may now rest satisfied that an effective bite inflicted on man or the lower animals by a cobra, a krait, or a daboia, rapidly leads to pathological conditions of the great nerve-centres and blood, which cannot, when fairly superinduced, be counteracted or controlled by any of the resources of the curative art, and that if treatment is to be of any avail, it must be immediate and decisive. For if time has been allowed for the absorption of the poison, and its transmission through the blood to the nerve-centres, there cannot be much hope of a favorable issue. There is reason to hope, however, that there must be an antidote for snake-poison. To him who succeeds in discovering and introducing it generally, the reward will be great, not only in the heartfelt consciousness of noble and good work accomplished, but in the applause and approbation of his fellow-countrymen.

We are glad to learn that Dr. Fayer is still persevering in the experiments with a view to the discovery of an antidote, and we earnestly trust that his researches may be crowned with the success he so much deserves.

The West Riding Lunatic Asylum Medical Reports. Edited by J. CRICHTON BROWNE, M.D. Ed., F.R.S.E., Medical Director of the Asylum, and Lecturer on Mental Disease, Leeds School of Medicine.

As the first report of the kind, in addition to its intrinsic merits, this volume deserves notice; and we trust that Dr. Browne's example will be followed by other alienists in Great Britain, in giving in a convenient form the results of their own and their fellow-workers' labours to the profession.

The first paper is by Dr. Crichton Browne, on the relation of "Cranial Injuries and Mental Diseases." After pointing out that the malformations produced by some savage tribes of the American Continent on their children's heads without intellectual impairment, are rather displacements than diminutions of capacity, and that besides, perhaps, securing the survival of the fittest, such manipulations are better borne by the young of uncivilized than of civilized tribes, he shows that the greater prevalence of insanity among civilized nations is due to the greater cranial capacity as shown by Drs. Barnard Davis and Pritchard; while it has been proved by the late Sir J. Simpson, and confirmed by Dr. Farr (22nd Annual Report), that male children, whose heads are larger and more liable to compression during parturition, have a much greater liability to mental disease. He relates several cases where there are good grounds for directly associating pressure by the forceps during delivery with mental disease.

He considers that the importance of injuries to the head is often underrated; that "concussion," which often leaves no post-mortem change, may yet exert an influence analogous to the change in wrought iron to the crystalline condition in railway axles from vibration.

He believes, and cites cases in proof, that the effect of similar or identical injuries to the head is influenced by (1) age (in modifying the type of mental disease); (2) by the previous condition of predisposition—physical, mental, or diathetic; and (3) by the locality of the lesion.

Dr. Mitchell contributes a paper on "The Action of Nitrous Oxide Gas." Some tentative experiments of its inhalation in

cases of melancholia gave temporary benefit; but they are too few to build any conclusion upon.

Mr. George Thomson, in writing of the sphygmograph in asylum practice, shows from tracings in general paralysis of the insane that the ventricular systolic stroke is shortened, the aortic notch is lost or nearly so, and the down-stroke consists of from six to ten wavelets. The importance of this is diagnostic, because detectable before the general symptoms are pronounced. Calabar bean is said to be beneficial in treatment, and the pulse tracings, after its administration, differ from those typical of general paralysis, in showing arterial relaxation: it is to be regretted that pulse tracings of the same cases before its administration are not given for comparison.

Mr. Aldridge gives some interesting ophthalmoscopic observations, and concludes that the retina may be taken as an index to the state of the intra-cranial circulation: and that remedies which equalize the circulation are most valuable. Over 100 cases of epilepsy with their ophthalmoscopic examination are detailed.

Mr. Burman gives some statistical tables upon 341 cases of general paralysis. The incidence of the disease in 45 per cent. of the cases was in the decade 36-45. The average duration he puts at one year nine months; the disease being a good deal more rapid in males than females.

Mr. Ward gives a few cases where hypodermic injections of morphia were used ($\frac{1}{8}$ th— $\frac{1}{4}$ th gr.) Cases of chronic mania subject to occasional outbursts of excitement are the class of cases where hope of benefit seems greatest.

Mr. Pedler, in a short paper on "Mollities Ossium," conjectures that it is primarily a neurosis.

Mr. Nicol, in a paper on "Progressive Locomotor Ataxia in the Insane," gives some cases which present symptoms of that disease modified by insanity—in several of the cases by general paralysis: but there seems no sufficient reason to regard the conjunction as other than accidental.

Mr. Lawrence on "artificial feeding" encourages to perseverance by saying that recovery after even three months' daily feeding with the stomach pump is not uncommon.

Mr. Sutherland fails to establish any special pathological significance of "arachnoid cysts."

Mr. Nicol and Mr. Dove contribute a paper upon phthisis and insanity: they conclude that any relation between the two is as yet quite negative.

Mr. Mayhew points out that in cases of acute delirious mania symptoms of mental depression or melancholia lead to a less favorable prognosis than if noisy gaiety is present, and that

the danger is in proportion to the degree of abstinence from food in the early part of the disease. He advocates good diet, diaphoresis, and nerve sedatives.

Mr. Churchill Fox advocates the more extended use of ergot of rye in the treatment of insanes. He finds it allay maniacal excitement and shorten the status epilepticus. He recommends its use alternated with the bromide of potassium in epilepsy, associated with epileptic mania.

We trust that the staff of the West Riding asylum will publish their further observations at no distant date.

Medical and Sanitary Report of the Native Army of Bengal for the year 1870.

Medical and Sanitary Report of the Native Army of Madras for the year 1870.

Sketch of the Medical History of the Native Army of Bombay for the year 1870.

(First notice)

THE plan which has been followed since 1868, in the Bengal Presidency, of publishing a "blue-book" on the medical history of the Native Army, has been adopted by the two sister presidencies for the year before last; and it is now, for the first time, possible to form easily an estimate of the relative healthiness of native soldiers throughout India. It is to be regretted that the three reports for 1870 are not drawn out on some uniform plan, which would greatly have facilitated comparison between them; and also that the medical history of the Native Army should not be rendered complete by publishing the statistics and reports of the Hyderabad Contingent. This force, consisting of four batteries of artillery, and of four cavalry and six infantry regiments, is under the medical superintendence of a Deputy Inspector-General of Hospitals of the Madras Service; and the corps of which it is composed send in, it is to be presumed, the usual returns and reports. But the medical history of the Contingent seems to have met with the proverbial fate of that which is everybody's business: Bengal, Bombay, and Madras alike ignore it. The statistics of a force consisting of 14 corps, with a total strength (if fully recruited) of 8,346, and therefore about four-fifths as strong as the Punjab Frontier Force, must be at least as valuable as those of the Bengal and Madras Body Guards (average strength 115.5 and 127), of the Aden Troop (85 sabres), or of the Company of 60 supernannuated gunners at Kohat, irreverently called "The Blökes."

A comparison of their statistics shows a startling difference between the health of the three armies, as may be here seen:—

	1868.		1869			1870.			MEAN 1869-70.		
	Bengal.	Madras.	Bengal.	Madras.	Bombay.	Bengal.	Madras.	Bombay.	Bengal.	Madras.	Bombay.
Average strength ...	55,469	29,722	54,469	30,146	24,166	53,996	29,253	23,370	54,232	29,699	23,768
PER CENT. OF STRENGTH—											
Admissions ...	118.4	76.7	162.5	78.5	132.68	159.8	71.7	125.09	161.15	75.1	123.88
Daily average sick ...	3.72	...	4.94	...	...	4.73	2.62	4.33	4.835	...	...
Deaths in hospital ...	1.03	0.9	1.76	1.2	...	1.45	1.01	0.84	1.605	1.105	...
Men invalided ...	1.03	...	1.91	...	...	2.00	2.434	3.68	1.955	...	...
Men sent on sick leave ...	1.16	...	1.97	...	...	1.91	1.03	2.32	1.94	...	...
Deaths in hospital per cent. of cases treated ...	0.92	...	1.05	...	...	0.88	1.42	0.68	0.965	...	...

It is remarkable that while the daily average number of sick per cent. of strength in the Madras Army is little more than half that of Bengal, and only two-thirds that of Bombay, the percentage of deaths to cases treated should so far exceed that in either of the other presidencies. Probably the system of allowing the families of soldiers to accompany them on all ordinary occasions, which prevails in the Madras Army, has the effect of excluding from hospital many trifling cases which would otherwise swell the daily average number of sick, and lower the percentage of deaths to cases treated. The Pegu division, where presumably comparatively few families accompany the troops, shows the lowest percentage (1.11) of deaths to cases treated in the Presidency, although this division has the largest percentage of daily average sick to strength (5.00) of any in the Madras Army. The ratio of deaths to cases treated among individual corps was highest in the Company of Sappers and Miners at Bellary (3.7), and in the head-quarters of the same corps at

Bangalore (3.2); it was lowest (0.37) in the 20th Madras Native Infantry at Seetabuldee.

The greater unhealthiness of the troops in Northern India is probably due chiefly to the variations of temperature to which they are exposed during the year, and (in less degree) to the greater change of climate to which regiments are subjected, when marching from one remote station to another, than in the Peninsula. While Madras troops, except when sent to China, never leave the tropics, and are seldom removed wholly from the influence of the sea, Bengal regiments are exposed to a change from tropical Bundelkand, or from Eastern Bengal (the moistest climate in the world), to the arid Punjab frontier, where the temperature ranges during the year from 112° to 25°, and the annual rainfall averages only 15 inches. The Bombay Army, which has to garrison Sindh and Aden in addition to the western side of the Peninsula, is exposed, though in a less degree, to similar changes of climate: indeed, of all the stations