

involve a considerable increase in human and animal suffering.

We were strongly of opinion that the use, even the abuse, of opium had not tended in any way to increase crime or insanity, though in certain cases it may have exercised an enfeebling influence over mind and body.

As regards bhang, we found many cases on record in which it had been the immediate cause of crimes of violence, and we advised that its use should be restricted as far as possible by means of a heavy import duty, and the prevention of its cultivation in the Island.

My belief is that natives who use opium have selected the least harmful form of stimulant, one which rarely acts as a cause of crime, insanity, or disease, and that any unwise interference will practically substitute alcohol, with all its dreadful immediate and remote effects, for opium. The agitation against it seems to be the result of ignorance.

I have seen a few cases of that curious and dangerous condition known as running amuck, or amok, among Malays, due to bhang and perhaps to opium. It is no doubt a transitory form of madness closely related to *epilepsia cursiva* of Bootius, in which the person commences running and then falls down in a fit. Wallace suggests "that it is a resort to what appears to a savage to be a kind of honourable suicide on the part of a man who for some reason is plunged in sorrow and dejection, thinks himself wronged by society, or to whom on account of misfortune life has become a burden."

Trusting that my remarks have not been too long, and thanking you for your attention, I now give place to those who have prepared papers which we have all come here to hear read.

SUMMARIES OF ADDRESSES IN OBSTETRICS, SURGERY AND OPHTHALMOLOGY AND MILITARY MEDICINE AND SURGERY.

OBSTETRICS.

SURGEON-MAJOR DIMMOCK gave an introductory address on the subject of forms of puerperal fevers in India. The introductory part of the address dealt with the importance of the work of the Countess of Dufferin Fund which was paving the way to a better knowledge of the science of midwifery and the diseases of women and children in India, in which there had not been so much advance as in general medicine and surgery. The effects of tropical climates, races, and other circumstances were considered, and the particular power of puerperal fevers associated with malarial fevers of the quotidian, tertian, quintidian, and remittent types with pyrexia, were described and illustrated by cases and chalks. The form of puerperal fevers of the dysentric, thermic, and other unknown type

were also referred to. A proposal was made to form an Indian Obstetrical Society, and men and women were urged to provide more material for the promotion of the clinical knowledge of fevers. With this object, as well as for the relief of suffering, the importance of employing skilled nurses of different castes and creeds was represented to the profession and the public as the growing need of the day.

SURGERY AND OPHTHALMASCOPIY.

Surgeon-Lieut.-Col. E. W. Lawrie delivered the presidential address in the above Section, and the following is a summary of his paper on the influence of Percival Pott, Syme, Simpson, and Lister on Modern Surgery. Dr. Lawrie began by a warm tribute to the paramount position of British surgery in India, he extolled the world-wide effects of the unique surgery of the North-West Provinces, and narrated a recent successful case of Listerian ovariectomy performed at a lonely out-station by a newly-passed pupil of the Hyderabad Medical School assisted by a compounder and two coolies. Pott established the principle on which modern surgery rests and eventually discovered the basis of the aseptic system introduced scientifically 110 years later by Lister. Syme extended and consolidated Pott's principles, added many new surgical operations and procedures, and following Simpson devised rules which are amply sufficient to insure uniform safety in chloroform inhalation. Lister introduced the antiseptic system and revolutionized surgery. The surgeon's duty now consists in preventing sepsis and infection in fresh wounds and arresting them when they already exist; and modern surgery means that we know how to ensure with almost mathematical certainty and precision the immediate healing of wounds without suppuration. By whatever process this is accomplished we owe our knowledge entirely to Lister. Dr. Lawrie adverted to Dr. Bomford's important discoveries in the Hyderabad Chloroform Commission which were only rendered possible by the the Nizam's liberality. He concluded by saying that the unacknowledged safety of chloroform in India was not due to race or climate, but to the fact that the principles of Simpson and Syme have predominated throughout India for many years past. The universal adoption of Syme's rules in modern surgery alone is needed to render the benefit of Simpson's priceless discovery unlimited.

MILITARY MEDICINE vs. SURGERY.

Surgeon-Colonel Gore, Army Medical Staff, Principal Medical Officer, Mhow Division, Bombay Army, in his address as President of this Section, reviewed the rise and progress of the Ambulance in war amongst civilized nations. He pointed out that for many centuries systematic arrangements for the care of the injured

in battle were conspicuous only by their absence, and that it was not until the Christian era was well advanced that the surgeon became a recognised feature in the military establishment. How the world owed an incalculable debt to Baron Rency, a leading surgeon in the armies of Napoleon, for the conception of the first organization of a prompt aid to the injured, the immediate effect being an entire rehabilitation of these services, improved subsequently by Baron Larrey, surgeon-in-chief of the French armies, during their most brilliant campaign, and by Sir James McGrigor, Principal Medical Officer to Lord Wellington in the Peninsula. He showed how forty years of peace had dissipated the experience of war of the Crimean Campaign. He also alluded to the recently published interesting experiences of Sir Evelyn Wood and Lord Wolseley during that period, and to the sanitary and hospital experiences of the Civil War in America; the introduction of Bearer companies and improved Field Hospitals in the Russian army, and the excellent work performed by them in the Bohemian wars in 1865 and in France in 1870. The surgical, medical and sanitary experiences of these and of the French in Algeria, the work of the Red Cross Societies and the latest changes in the French and German Medical Societies, were also referred to, and the opinions of Billroth, Bardeleben, Major-General of the Russian army, were quoted as more recent witnesses as to the future of the wounded, and the measures which must be adopted to cope with the great mass of wounded soldiers by whose valour great empires had been formed, and whose countless gallant deeds, soldier-like qualities many trials, most uncomplainingly endured, and discipline under the most trying circumstance, has made the alleviation of their sufferings an important duty of every State.

Original Communications.

ANTI-CHOLERAIC INOCULATIONS IN INDIA.

BY W. M. HAFFKINE.

THE object of the present paper is to give a brief sketch of the work which I have done in India during 1893 and 1894.

Ten years have elapsed since this city was visited by Robert Koch for the purpose of investigating the causes of cholera. The researches, which have since then been carried out in various parts of the world and under most different conditions, all tend to confirm his original results. In spite of the most careful researches, no other microbe has been found besides the *comma bacillus*, that is constantly associated with the disease, and is not to be found in any other circumstances.

Cholera, as a natural disease, is not known among animals. Even man in an average state of health exhibits a high degree of resistance to this disease, although the differences observed in this respect in a *number* of individuals are very great. In correspondence with these facts, it has been shown that animals do not become affected by the comma bacilli in a way recalling the symptoms of cholera, and that an artificial infection tried on healthy men remains in a very large proportion of cases without effect. The toxic power of the comma bacilli can, however, be shown in many ways. In the majority of domestic and other animals, when introduced into their abdominal cavity, often in minimal quantities, the comma bacilli produce a fatal effect. The same result is observed when the cholera microbe is injected into the depth of the muscular tissue. Its introduction into the circulatory system is accompanied by important disturbances of health, which may be fatal.

But the disease thus produced in animals does not present the symptoms peculiar to cholera, and when given per os, and thus introduced into the alimentary tract, the comma bacilli remain without effect.

It is easy to show that, by preventive treatment with attenuated cholera virus, the animals can be protected against all those forms of artificial infection, which otherwise would be fatal to them. Ferran in Spain, in 1885, experimenting on very young guinea-pigs, which used to succumb to a hypodermic inoculation, has shown the protection with regard to this form of infection. In 1892, Brieger, Kitasato and Wassermann, and myself have shown an immunization against peritoneal inoculation. I have demonstrated that animals can also be protected against the infection in the muscular tissue. A number of investigators have repeated these experiments with the same results, and on different species of animals.

But the chief question whether it is possible to protect man against the particular form of disease to which he is subject, cannot be solved by these experiments beyond a certain degree of probability.

On the other hand, the infection of the *intestinal tract* of lower animals by the comma bacilli can be produced only under circumstances which tend to obscure the results and make the conclusions drawn from them uncertain. The usual method adopted for this kind of infection, since the experiments of Koch, consists in introduction into the stomach of a 5 per cent. solution of carbonate of soda and of the injection into the peritoneum of an alcoholic solution of opium in the proportions of one gram. of the tincture to 300 grams. of the weight of the animal. The dose of the microbe is then introduced by a sound into the stomach.

The first of these three processes, the injection of soda, is intended, by neutralizing the