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THE INOCULABILITY OF MALIGNANT GROWTHS.

OBSERVATION of the modes of dissemination of malignant growths in the human subject indicates, if it does not demonstrate, that these possess the property of infecting other portions of the organism in which they have originally appeared. The various methods of dissemination may be classed under four heads, namely, (1) spread by continuity; (2) spread by contiguity; (3) regional discrete development, and (4) vascular conveyance. In the first case, infective progress takes place in the same tissue or organ; in the second, from one tissue or organ to an adjoining and organically united tissue or organ; in the third, by successive development within a certain area, generally in the same tissue, of disease foci which, in the first instance, are discrete and may or may not eventually coalesce; and in the fourth case, the secondary developments are distal and the agency evidently conveyance by the lymph or blood stream. These methods of dissemination are precisely the same as are observed in certain inflammations, more particularly those of septic or infective nature, and in certain constitutional diseases, *e. g.*, syphilis and tubercle. The phenomena observed in all these instances leave no reasonable doubt that something travels or is conveyed from one part of the organism to another, and the nature of that something has still in most cases to be discovered. Confining our attention to malignant growths, various attempts have been made with varying results to transfer portions of these to animals, and under certain circumstances such inoculations or implantations have succeeded in producing similar growths in the tissues of the animals subjected to experiment, and these growths have been

observed to undergo dissemination in the bodies of such animals in the same manner as in the human organism. The most recent experiments of this sort are those of HANAU on white rats, and WEHR on dogs. These experiments were made with cancer, and they go to prove the inoculability of cancer on animals presumably susceptible and hitherto exempt. In other words, the implantation of fragments of cancer tissue in certain healthy animal bodies is capable of causing the development and dissemination of cancer disease in these. Very recently similar experiments have been made on the human subject. At a meeting of the Académie de Médecine of Paris on the 23rd of June, Professor CORNIL communicated two experiments which had been made by a surgeon whose name, nationality, and residence he kept secret. In one a fragment of sarcoma was taken from a breast tumour which had been removed and implanted under antiseptic precautions in the other healthy breast; the wound healed, but a sarcomatous nodule, subsequently excised, grew, and when the patient died from some other cause no other growth was found in any other part of the body. In the other case, a graft of cancer was similarly implanted, but the patient declined its removal and the experiment was infructuous. It appears that Dr. HAHN and Professor VON BERGMANN had previously practised similar inoculations with similar success in Germany with the difference that the inoculations were made in subjects in whom the disease had advanced to an incurable stage. These experiments would indicate that fragments of cancer and sarcoma tissue are capable of undergoing development when implanted in healthy tissues.

These proceedings have raised a storm of indignation and disgust both within the profession and amongst the general public. In this feeling we most fully participate.

The trials were inconclusive, inasmuch as they were made in subjects already affected with cancerous and sarcomatous tumours, and it is impossible to aver absolutely that the new developments were due to the implantation and not to the injury. In fact it is auto-inoculability that these proceedings prove and that is pathologically a very different thing from what we may call hetero-inoculability. They were unnecessary, because observation of the dissemination of these diseases in the body sufficiently

proves infectiveness as far as persons already subject to the disease are concerned. They were inhuman and opposed to all good feeling and right instinct, both general and professional. Vivisection of animals is an evil and unjustifiable unless employed for an undoubted and important gain to knowledge which will indisputably benefit humanity and cannot be attained in any other way.

Vivisection of human beings is absolutely unjustifiable under any circumstances, and if it is suspected that members of the medical profession experiment on their patients or subject them to any treatment other than that which is clearly for their good—for the cure of disease, relief of pain, and improvement of health—the profession will fall under suspicion and into disrepute, and righteously so.

The only lesson that can possibly be drawn from these French and German experiences is that instruments which have been in contact with diseased parts should not be brought into contact with sound parts of the same or other subjects without undergoing a very thorough cleansing. And this lesson we would very strongly impress on our readers.

THE LATE SURGEON-MAJOR
A. BARCLAY, M.B., C.M.

THE death of Surgeon-Major A. Barclay, M.B., Secretary to the Surgeon-General with the Government of India, which took place at Simla, on the 2nd of August last, has deprived the Indian Medical Service of one of its most popular and promising members, has cut short a career of great industry and usefulness in administration and science, and deprived a large circle of friends of a staunch and greatly respected and cherished acquaintance. Dr. Barclay had just completed 39 years of age, and on the 30th of September next would have completed 17 years' service. He was therefore entering that period of life and service which is usually most productive, when previous experience and work are beginning to bear fruit, when the mind is fully matured and power has not begun to decline. Before entering the service his studies had been prosecuted in Glasgow, Edinburgh, and Wurzburg. He passed third of his year, and

arrived in India on the 25th of March 1875. After spending a short novitiate at the Presidency General Hospital, Calcutta, he was appointed, in May 1875, to do duty with the Bengal Sappers and Miners. From that period up to November 1880, when he was transferred to civil employ in Lower Bengal, he held officiating charge of no fewer than eight regiments, and his opportunities of acquiring a practical knowledge of the geography of the Bengal Presidency were therefore considerable. He held charge of the Civil Station of Jessore for a few months, and was then appointed Second Resident Surgeon in the Presidency General Hospital, which important post he held for seven months, being transferred thence to officiate for a year as Professor of Physiology in the Calcutta Medical College. On relinquishing that appointment he became Secretary to the Surgeon-General with the Government of India and, with an interval of one year on sick furlough, held that office till November last when he was placed on special duty with the Leprosy Commission. He was attacked with typhoid fever at Simla while engaged in this work. He seemed to be doing well until very shortly before death when symptoms of peritonitis which proved rapidly fatal set in. He was buried on the 3rd, and the funeral—a military one—was attended by the *élite* of Simla society, testifying to the respect and regard in which Dr. Barclay was held by all classes. He was a man of quiet disposition and amiable temper, most obliging and urbane in office, and steadfast and true in all the domestic and social relations of life. Possessed of great gifts of observation and a logical mind, he was also gifted with industry and power of work; notwithstanding a delicate frame and constitution he laboured hard in office and at home. His official work was carefully and conscientiously done: his reports clearly and ably compiled, and his letters politely and lucidly composed. He had the welfare of the service closely at heart, and was always ready to assist any brother officer requiring official information or assistance. His private labours were devoted to the interesting and important study of vegetable parasites. His researches on this subject were embodied in a series of papers published in the "Scientific Memoirs," edited and issued by the Surgeon-General, and contributed to the Asiatic Society of Bengal. A complete list of these papers is contained in a