THE LANCET.

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SOME INTIMATE ASPECTS OF HUNTER.

THE opening pages of our issue this week are occupied with the Hunterian Oration delivered on Saturday last, Feb. 14th, by Sir D'ARCY POWER, before the Royal College of Surgeons of England. The Hunterian Orator approached his great subject from a particularly intimate biographical side, and as a result was able to give pathetic details of the physical disabilities under which the Father of modern surgery carried on his magnificent work during the last 25 years of his life. JOHN HUNTER died of widespread disease of the arterial system, the largest as well as the smallest arteries being involved, and there seems no doubt, after the minute and tragic story set down by the Hunterian Orator, that the cerebral symptoms from which he began to suffer after he had inoculated himself with syphilis in 1767 continued intermittently until his death in 1793. The whole of the picture, as vividly drawn by Sir D'ARCY POWER, becomes coherent when we read of HUNTER'S pathological lesions alongside of the description of his mentality, while we remember the splendid range of his accomplishment. We can understand the devoted affection which he inspired in his pupils, and we can understand also how a man devoid of all tact, and ill-equipped in accurate phrasing or the arts of persuasion by speech or by letter, should have made bitter enemies; and it was a happy thought which inspired the exhibition during the Oration of a series of illustrations directly lampooning the venerated subject of the discourse. For often the advocatus diaboli proves himself a valuable biographer, in proof of which we may refer to Mrs. PIOZZI, who in her venom threw light on the great JOHNSON, where the pious BOSWELL was silent.

In this way, that good hater, JESSE FOOT, by revealing the existence of a group of men who were rendered suspicious and jealous by the reiteration of HUNTER'S merits, shows us that HUNTER often felt himself in contest with personal foes and knew himself to be the subject of limitless detraction at their hands. For this circumstance dictated the uncomprising attitude which he always adopted in his personal disputes. The water-colour drawings, which were exhibited by means of the epidiascope at the close of the Oration, were executed for FOOT by an artist named BEAUMONT, to accompany a scurrilous life of HUNTER, the preparation of which seems to have occupied the last 30 years of FOOT'S life—he was a pamphleteering medical practitioner, 16 years HUNTER'S junior. The sketches are not only skilful in detail but so consistent as to portraiture that to the eye of candour, as FOOT might have said, they appear both contemporary and correct. Three volumes of FOOT'S history, thus extra-illustrated or "grangerised," are now in the possession of the Wellcome Historical Museum, and for the following information concerning them we are indebted to Mr. VICTOR PLARR, Librarian to the Royal College of Surgeons of England. "A note," he says, "by FOOT on the back of a ball programme, dated from Ilfracombe in 1823, disputes with one, DYER the publisher, as to the price to be paid for the collection of illustrations, DYER claiming not less than £86, plus extras, and FOOT standing out for £78. How the matter was settled is not known. The pictures are not caricatures, but may be described as excellent uncivil likenesses. JOHN HUNTER first appears holding WILLIAM HUNTER'S invitation to London in his hand, and labouring at rough farm carpentry. Then in the kind of Highland dress the English of that day supposed Lowlanders to wear, he bids good-bye to his old father at the ancestral farm. He is handed a big bag of bawbees, and looks a nice red-haired Scotch laddie. Doubtless, in common with others, FOOT resented HUNTER as an interloper from the Kingdom of Scotland. In a blue suit the young HUNTER is next seen repairing to the shop of a dentist and barber. He holds a hare punningly in his hand in allusion to Spence's stock of wigs, displayed with dentures in the shop window, and it is suggested that he forms a disreputable partnership with SPENCE. HUNTER now sheds his blue coat, becomes a successful surgeon, and appears as a typical grave figure in black, a flat black wideawake on his still auburn locks. He looks for all the world in successive sketches like a little curate—a curate of genius. FOOT, whose picture is inserted, appears by contrast stately, in blue coat and buff waistcoat and breeches. There is next a sketch of HUNTER'S very bare surgery and consulting room, where he is seen malpractising on the small son of Sir ROBERT ROWLEY, bitten by a mad dog, and one of HUNTER'S supposedly suppressed failures. In another scene the irate and stately PETRUS CAMPER advances with a horsewhip on HUNTER. Again, we see JOHN and WILLIAM HUNTER disputing across a table at the Royal Society in the presence of Sir JOSEPH BANKS, so hated by 'PETER PINDAR.'"

The learned librarian's comments thus bring us to the examples of BEAUMONT'S pictures inserted in our text. One of these records that HUNTER builds a house in Leicester-square, and entreats the eccentric MARTIN VAN BUTCHELL, bearded and wearing a billy-cock, and mounted on a queer pony, to come and survey the premises. In another picture a golden calf is over the door and the approaching figure of EDWARD JENNER worships it—perhaps prophetically. In a third, HUNTER drives a pair of buffaloes from his Earl's Court house to Leicester-square and extends a friendly hand to a menagerie showman en route. A fourth is a vile rejoicing at HUNTER'S sudden death in St. George's Hospital. HUNTER'S face throughout the pictures is distinctive with prognathous jaw, pointed chin, lean cheeks, long sharp nose, and yellow natural hair. It is no small tribute to the fame of the philosopher that 30 years after his death FOOT knew that his enemy's personality would be recognised. This outburst of spleen had a result exactly opposite to its intent, revealing as it did to all men the welter of suspicion in which HUNTER moved and the magnificence of his triumph over it.

THE BACTERIA OF FOOD POISONING.

SINCE it has been ascertained that nine out of ten outbreaks of food poisoning are traceable to bacteria of the Salmonella group, the public have a right to ask that efforts should be made to prevent the infection of food by these organisms. The Ministry of Health has enlisted the coöperation of the Medical Research Council to this end, and while the actual paths through which the organisms find their way into incriminated foodstuffs still elude discovery, the results of an investigation subsidised by the Council clear away

several preliminary difficulties. A report[1] by Dr. W. G. SAVAGE in association with Mr. P. BRUCE WHITE throws light, not only on the identification and classification of bacteria of the Salmonella group, but also on their distribution in nature and on the effects produced in animals by infection with different types of organisms. All the members of this group are short sporeless bacilli with rounded ends, possessing flagella and exhibiting motility. They are Gram-negative, stain readily with ordinary dyes, and are bile-tolerant. Their principal cultural characteristics are good growth on agar and on gelatin, which is not liquefied, the production of acid and gas from glucose and mannite, and the inability to ferment lactose, saccharose, and salicin, or to produce indol. Classification of the types of organism which make up this group has been attempted by various observers on the basis of morphological and cultural characters, of serological properties, of the source of derivation, of the pathological reaction in man and other animals, and of protective specificity. The result has been great confusion and overlapping. Dr. SAVAGE and Mr. WHITE give good reasons for regarding the biological and serological characters of the different strains as the most satisfactory basis for differentiation, using the other properties as confirmatory factors. From the examination of 150 strains Mr. WHITE has differentiated ten main types, which correspond very closely with those identified and described by H. SCHÜTZE in THE LANCET (1920, i., p. 93), and the first part of this report is devoted to a discussion of their serological properties. The distribution in nature of these species and the type of disease they may produce in man as well as in animal hosts has been provisionally tabulated in the second part of the report. The common causes of food poisoning outbreaks are *B. aertrycke* and *B. enteritidis*. Of these the former produces disease in cows, calves, and rats, while the latter is a widespread cause of enteritis in mice, guinea-pigs, and birds; it is occasionally found in pigs and calves but does not occur commonly in rats. The Derby, Stanley, and Newport types can also cause food poisoning in man, but their distribution in nature is apparently much less widespread. The Stanley type has not yet been isolated from animals; the Newport type is unknown in animals other than dogs; and of the Derby type, which has been isolated from pigs, the exact disease-producing rôle is unknown. *B. suipestifer* is exceptional as a cause of food poisoning, requiring special conditions such as massive infection. The fact that of all these species *B. aertrycke* is the least specialised as regards animal hosts may well be related to its common association with food poisoning in man.

That bacilli so closely related in their biological affinities should yet have such different pathological significance is a matter of great interest. For example, *B. paratyphosus* B regularly causes paratyphoid fever in man and probably never produces acute food poisoning of the ordinary type; further, there is no evidence that it can set up disease in animals. *B. aertrycke*, on the other hand, never causes paratyphoid fever in man but commonly food poisoning, and is found not infrequently to be the causative agent of disease in animals. Dr. SAVAGE and Mr. WHITE have attempted, in the third part of their report, to throw light on these and other pathological differences by a study of the local action of different types of Salmonella bacilli upon the alimentary tract in experimental animals. Parenteral introduction of organisms has been used for certain experiments, but in the main bacilli have been administered by the mouth, in order that the method of introduction may be comparable with that in the human victim of food poisoning. The majority of the feeding experiments have taken the form of a comparative study between *B. aertrycke* and *B. paratyphosus* B. Experimental evidence supports the view that the essential lesion in food poisoning is irritation of the alimentary tract by a toxic substance which the authors believe to be an internal secretion of the organism, and to be directly associated with the virulence of the strain. The irritant effect is most vigorously exhibited by those strains which are responsible for food poisoning outbreaks and is much less evident, though not entirely absent, in types such as *B. paratyphosus* B and C, which do not cause human food poisoning of the ordinary irritant type but set up a more general infection.

In a review of the relationship of some of the factors concerned in infection to food poisoning outbreaks and animal infections which concludes the report, it is noted that the serological classification coincides at many points with differences in cultural behaviour, distribution, toxicity, invasive power, and pathogenic behaviour, though a great deal more work must obviously be done before conclusive results are reached. Unfortunately, in all outbreaks of food poisoning, whatever the type of organism concerned, the clinical features are essentially the same. The symptoms are those of intense gastro-intestinal irritation, and the attack is probably localised to the alimentary tract in that large majority of cases in which recovery ensues. The low death-rate (about 1 per cent.) in a disease of such severity is attributed by the authors to its causation by organisms of intense toxicity but low invasive power. The implication of the Salmonella group in the outbreaks following consumption of toxic canned foods where no organisms can be isolated is regarded as highly probable. The experimental evidence bearing upon this question is certainly suggestive, but Dr. SAVAGE and Mr. WHITE do not offer it as conclusive. Indeed, throughout the report the utmost care is taken not to claim too much from animal experimentation. But the fact that the authors have made and will shortly report detailed investigations, epidemiological and bacteriological, of 100 actual recent outbreaks of food poisoning in this country is sufficient guarantee that their laboratory experiments are only auxiliary to observations of disease in man, and it is mainly by such well-balanced combination of observation and experiment that modern epidemiology progresses.

[1] Medical Research Council, Special Report Series No. 91. H.M. Stationery Office. 3*s*. 6*d*.

SCIENCE AND GOVERNMENT.

THE group of photographs of medical Members of Parliament in THE LANCET of Feb. 7th recalls to a correspondent an interesting discussion in *Nature* (Jan. 3rd, 1925) of the part taken—or rather not taken—by scientific men in the government of modern countries. Dr. A. D. LITTLE had addressed the Franklin Institute in Philadelphia on the anomaly that, although all the distinctive features of modern civilisation are due to the discoveries made by scientific men, yet nowhere is the governing and directing power in their hands. The premise is obviously wrong; modern civilisation has its moral as well as its material victories, and if it consisted of nothing but aeroplanes and wireless it would not be much worth bothering about. But the fact is true enough, and at first sight it is perhaps rather surprising, though a little reflection suggests that such