

any cutaneous discoloration whatever; and eight of well-marked bronzing of the skin with no capsular disease.

Taking now into consideration all the evidence which pathological research has thus far brought to bear upon this question, all that it seems to me justifiable to assert is, that in the majority of cases, but by no means in all, disease of the supra-renal capsules has been found co-existing with bronzed skin and its accompanying symptoms, but whether or not any connection, such as that of cause and effect, exists between them, the testimony thus far is insufficient to decide.

Soon after the publication of Dr. Addison's work, M. Brown-Séguard performed a series of vivisections, in the hope of discovering the functions of the supra-renal capsules, and thus throwing light upon their pathological relations. The results of his investigations are published in the *Gazette Hebdomadaire* for 29th August, the 9th and 15th of September, 1856, and the 20th February, 1857, and he has given an analysis of the conclusions of other observers, and a restatement of his own views, in the first number of the *Journal de la Physiologie de l'homme et des animaux* published by himself in January of the year 1858.

His experiments consisted in the more or less entire extirpation of one or both supra-renal capsules in a number of small animals of different species. He found that death resulted from this, with the intervention of great physical prostration, in the course of a short time, more or less limited, according to the severity of the injury to the organ, and varying in different kinds of animals. He operated on mice, guinea-pigs, rabbits, cats, and dogs, and he places the average duration of life, after the extirpation of both capsules, at seventeen and a half hours. In general terms, the conclusions he draws from his experiments are, that the functions of the supra-renal capsules are essential to life in animals not albinos; and that the suppression of these functions results in death more or less rapidly, according as it is more or less immediate and entire; that the complete extirpation of these organs is more rapidly fatal than that of the kidneys.

The exception made in regard to albinos was suggested to M. Brown-Séguard by some experiments of other observers, which I shall allude to. In regard to this he says, that the fact sometimes observed, that albinos seems to survive definitely the loss of these organs, tends to prove that in animals possessing color, one of these principal causes of death after such a loss is an undue accumulation of pigment.

Thus in physiology, as in pathology, the early results were in favor of the original theory of Dr. Addison. Later ones, however, are far from substantiating the preceding. In the *British and Foreign Medico-Chirurgical Review* for January, 1858, Dr. Harley has published a very forcible and interesting article, a part of that already alluded to, in which he gives the results obtained by him from a number of experiments made with the strictest care, and under the most favourable circumstances, and the conclusions he arrives at are almost diametrically opposed to those of M. Brown-Séguard.

He also operated on mice, rats, guinea-pigs, cats, and dogs. In performing his operations, however, he took a precaution which, of itself, it seems to me, should give greater weight to his results, and that is, the rendering his animals insensible to pain, whereby not only greater quiet, and consequently greater precision in the operation was secured, but also a very considerable diminution, if not an entire avoidance of the immediate shock of the operation, both of which are certainly great advantages. The evidence afforded by one or two of his experiments is so strikingly important, that I will give a brief notice of them. He selected, in one instance, a large, strong, and apparently very healthy tom-cat. After rendering him insensible, he cut down upon the supra-renal capsules, and to his great surprise found them very rough, and perfectly hard, like stone. Such was their condition, that he enucleated them with the greatest facility, no hemorrhage taking place, and apparently no injury of the surrounding parts, except the necessary laceration of the blood-vessels, lymphatics, and nerves immediately connected with the organs.

Further examination of the organs revealed an entire disorganization of their normal