

structure, and its replacement by a deposit chiefly of carbonate of lime. The following morning, contrary to the confident expectations of Dr. H., the cat was found dead. A post-mortem examination gave no clue to such a result. Notwithstanding the most thorough search in the brain, spinal cord, thoracic and abdominal organs, and even the blood-vessels, nothing was found except the most trifling signs of peritonitis.

Here, then, was a case where death had followed very quickly the removal of the supra-renal capsules, and yet those capsules had been entirely incapable of function for a long time. In this case, certainly, death could not possibly be ascribed to the interruption of the functions of these organs, as M. Brown-Séguard infers was the case with his animals. Surely those functions were not essential to the life of this particular animal. Yet their removal was followed by immediate death.

The vessels were insignificant in consequence of the entire change in the structure of the organs; and, in the absence of any sign of other cause, Dr. Harley was forced to conclude that death resulted from laceration of the ganglionic system of nerves, whose connexions with the supra-renal bodies are very numerous. The cat was of a tawny color, but in regard to the occurrence or not of any change in this respect nothing was known, but his appearance and vigor were sufficient proof that no serious diminution of vital force had taken place.

In another experiment Dr. H., removed both supra-renal capsules from a piebald rat, at an interval of six weeks. The animal had a quick and apparently complete recovery and became fat and healthy in appearance in a few weeks. Eighty days subsequent to the removal of the last capsule, the spleen was taken away, the blood of which was loaded with white corpuscles. The animal survived this last operation but a fortnight.

Here, again, an animal lived three months deprived of its supra-renal capsules, and most of the time apparently in the enjoyment of robust health; dying at last only after another severe and often fatal operation. Neither in this case was any change in color noticed.

Other experiments performed by Dr. H., in connexion with M. Philipeaux of Paris are even more decisive. They removed the spleen and supra-renal capsules from some young rats which, at the time of Dr. H's publication, nearly eight months subsequent to the operations, were still in his possession, alive and well, no change in color, or other sign of altered function being apparent; and all this, not only in the case of albinos as objected by M. Brown-Séguard, but also in animals possessing color. M. Philipeaux himself states, in the *Gazette Hebdomadaire* for the 6th March, 1857, that he has in his possession two albino rats, three months old, who have been deprived of their supra-renal capsules for sixty seven days, of their spleens for twenty-six days, and of their thyroid glands for seven days; the result of experiments made in reply to M. Brown-Séguard's objection that the office of the lost capsules might perhaps be vicariously performed by some other organ whose function is unknown, as the spleen or the thyroid body. He has also two rats, a male and a female, the former of which had lived four months, and the latter forty-three days after the removal of the supra-renal capsules, and which were still living without any apparent modification of their functions. The female, subsequently to the operation, became pregnant, and produced eight young ones.

These are but a few experiments made by these two gentlemen. I might bring forward many others which, though not quite so decisive, perhaps, as those already adduced, still bring strong proof to show that the functions of the supra-renal capsules, in the lower animals at least, are very far from being so important as M. Brown-Séguard believed.

In the *Gazette Hebdomadaire* for the 12th of September, 1856, there are published the results of experiments of a similar nature by M. Gratiolet, and in the numbers for the 21st November, 1856, and 2d of January, 1857 still other researches by M. Philipeaux.

Their conclusions however, coincide with those of Dr. Harley.

Such is the testimony which physiological inquiry has brought to bear upon this ques-