

**ON THE MECHANISM OF
THE
PHYSIOLOGICAL ACTION
OF THE CATHARTICS**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649408849

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BY

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BERKELEY
THE UNIVERSITY PRESS
1906

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JOHN BRUCE MACCALLUM.

The following pamphlet was completed only a few days prior to the death of the author, which occurred on the sixth of April, nineteen hundred and six. Through his death Physiology was robbed of one of its most brilliant young investigators.

John Bruce MacCallum was born in Dunnville, Canada, on the eighth day of June, eighteen hundred and seventy-six. Through the influence of his father, Dr. G. H. MacCallum, now Superintendent of the State Asylum at London, Ontario, his interest in the natural sciences was early aroused and during his college career at the University of Toronto as much of his time as possible was devoted to these subjects, but chiefly to biology. After his graduation in 1896 he entered the Medical School of Johns Hopkins University. Under the influence of Professor Mall he undertook during his first medical year an investigation on the histogenesis of the cells of the heart-muscle, and it was characteristic of him that he began his work in pathological anatomy also with an original investigation. During the third year of his medical course he again prepared several anatomical papers and at the same time assumed the burden of the proof reading and of preparing the index of Barker's book on Neurology. It was during this year, 1898-1899, that the first symptoms of the disease appeared which was to cut short the life of this talented, indefatigable worker. From this time on he was constantly handicapped in his work by the struggle against illness.

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After his graduation in medicine in nineteen hundred he returned to Baltimore as assistant of Professor Mall. In nineteen hundred and one he went to Leipzig to work in the laboratory of His, but his old enemy again interrupted his work, this time attacking him in the form of an affection of the apex of the lungs. He returned home as soon as sufficiently recovered to bear the journey, and upon the advice of Dr. Osler he spent the winter in Jamaica. During this period he translated and edited Szymonowicz's histology into English.

The condition of his health made it impossible for him to live in the East and in the autumn of nineteen hundred and two he went to Denver, "where he rented an office and tried to practice. He abhorred the life, though, and held in contempt the charlatans with whom he came in contact. There were patients and he made enough money to pay his expenses in the few weeks he was there, but the repugnance to that kind of life was too great, and he abandoned his practice. They had made him teacher of anatomy in their medical school, in charge of the department, I believe. The students were difficult to manage—their ideals being far different from his."¹ The bright spot in his life in Denver was his association with Dr. Sewall, the former physiologist.

Having accepted a call to the University of California, I offered Dr. MacCallum a position as assistant in physiology, and we began our work here together. During the first and second years his health was tolerably good, but in nineteen hundred and five he undertook a problem on immunity which was beyond his physical strength and he began to fail rapidly. He went East to be treated by Professor Osler, returning to Berkeley in the fall of the same year, in a much weakened condition, but if he realized how critical was his condition he betrayed it to no one. He was cheerful and apparently hopeful. As he was not able to exert himself in

¹ Quoted from a letter from his brother, Professor W. G. MacCallum, of Johns Hopkins University, to whom I am under obligation for the data given in this sketch.

experimental work, I suggested that he put the results of his experiments done at Berkeley into book form.

The present volume is the result of this work, the last done before death claimed him. It has been published without alteration. The preface was probably written two days before his death, which came suddenly—as he had always wished that it might.

MacCallum belonged to that type of scientists whom we may designate as discoverers. His results were obtained quickly, were made secure beyond doubt, and were put into such shape that they could easily be demonstrated by him. But as is also common in the case of discoverers, his publications were comparatively brief. This may make it at times difficult for inexperienced or uncritical workers to repeat his experiments. I may state, however, that they belong to the regular class exercises of the medical students in our laboratory. Those who have once learned how to perform them can always count upon their succeeding.

In his work as well as in his life he was a calm thinker, the reverse of a hustler. He conceived his experiments in the spirit of an artist and the realization of his ideas was the poetry his work put into his life. He did not work for outside success, nor did he pose as a benefactor of mankind.

Those who have known him well feel that the death of John Bruce MacCallum has left a gap which will never again be filled.

JACQUES LOEB.

BERKELEY, November 7, 1906.

PUBLICATIONS BY JOHN BRUCE MacCALLUM.

1. Fresh-water Cladocera.
University of Toronto Quarterly, May, 1895.
2. On the Histology and Histogenesis of the Heart Muscle Cell.
Anatomischer Anzeiger, Bd. XIII, 1897.
3. On the Pathology of Fragmentatio Myocardii and Myocarditis Fibrosa.
Johns Hopkins Hospital Bulletin, No. 89, 1898.
4. On the Histogenesis of the Striated Muscle Fibre and the Growth of the Human Sartorius Muscle.
Johns Hopkins Hospital Bulletin, Nos. 90-91, 1898.
5. A Contribution to the Knowledge of the Pathology of Fragmentation and Segmentation and Fibrosis of the Myocardium.
Journal of Experimental Medicine, Vol. IV, 1899.
6. Development of the Pig's Intestine.
Johns Hopkins Hospital Bulletin, Vol. XII, 1901.
7. Notes on the Wolffian Body of Higher Mammals.
American Journal of Anatomy, Vol. I, 1902.
8. On the Muscular Architecture and Growth of the Ventricle of the Heart.
Johns Hopkins Hospital Reports, Vol. IX, 1900.
(Memorial volume to Dr. W. H. Welch by his pupils.)
9. Text-book of Histology and Microscopic Anatomy. By L. Szymonowicz. Translated and edited by J. B. MacCallum. Lea Bros., 1902.
10. On the Mechanism of the Action of Saline Purgatives, and the Counteraction of their Effect by Calcium. (A preliminary communication.)
University of California Publications, Physiology, Vol. I, 1903.
11. On the Action of Saline Purgatives in Rabbits and the Counteraction of their Effect by Calcium. (Second communication.)
American Journal of Physiology, Vol. X, 1903.
Also: University of California Publications, Vol. I, 1904.

12. On the Local Application of Solutions of Saline Purgatives to the Peritoneal Surfaces of the Intestine.
American Journal of Physiology, Vol. X, 1904.
Also: University of California Publications, Vol. I, 1904.
13. On the Influence of Calcium and Barium on the Flow of Urine. (A preliminary communication.)
Ibid., 1904.
14. The Influence of Saline Purgatives on Loops of Intestine Removed from the Body.
Ibid.
15. The Secretion of Sugar into the Intestine Caused by Intravenous Saline Infusions.
Ibid.
16. The Action of Cascara Sagrada. (A preliminary communication.)
Ibid.
17. The Influence of Calcium and Barium on the Secretory Activity of the Kidney. (Second communication.)
University of California Publications, Physiology, Vol. II, 1904. Also in the Journal of Experimental Zoology, Vol. I, 1904.
18. Ueber die Wirkung der Abführmittel und die Hemmung ihrer Wirkung durch Calciumsalze.
Pflüger's Archiv, Bd. 104, 1904.
19. The Action on the Intestine of Solutions Containing two Salts.
University of California Publications, Vol. II, 1905.
20. The Action of Purgatives in a Crustacean (*Sida Crystallina*).
Ibid., 1905.
21. On the Diuretic Action of Certain Haemolytics, and the Action of Calcium in Suppressing Haemoglobinuria. (A preliminary communication.)
Ibid., 1905.
22. The Diuretic Action of Certain Haemolytics and the Influence of Calcium and Magnesium in Suppressing the Haemolysis. (Second communication.)
Ibid., 1905.
23. The Action of Pilocarpine and Atropin on the Flow of Urine, by John Bruce MacCallum.
Ibid.
24. Factors Influencing Secretion.
The Journal of Biological Chemistry, Vol. I, 1906.