

## THE DISCOVERY OF UREA STIBAMINE

**Philip D. Marsden**

We have recently celebrated the Centenary of Gaspar Vianna and his great discovery of the value of tartar emetic in the treatment of leishmaniasis.<sup>1</sup> It is timely to mention the important work in Calcutta of Doctor Upendranath Brahmachari. The problems of toxicity of trivalent inorganic antimonials are well known and between the years of 1915-1921 Brahmachari carried out many experiments in a small laboratory attached to the Campbell Medical School in Calcutta. He first synthesised several new inorganic antimonials and achieved some treatment success with colloidal metallic antimony which was taken up by the reticulo endothelial system. Dissatisfied with these results however he turned his attention to organic aromatic antimonials inspired by the idea that an antimonial having a constitution similar to atoxyl (which was found by Ehrlich to be effective in sleeping sickness) might prove useful in kala azar. In 1919 supported by the Indian research fund he prepared P-Stibanilic Acid and various salts. In 1920 by heating Stibanilic Acid with urea he produced the first organic antimonial to achieve wide acceptance as a treatment for human leishmaniasis namely urea stibamine. The reason for this choice was that urea in combination with certain drugs reduces the pain on injection. Both Brahmachari and Shortt of the Indian Medical Service found this drug to be extremely effective and safe in the treatment of kala azar. It saved thousands of lives in India where it was manufactured on a commercial scale. However it proved difficult to standardise and

has been superseded by the more satisfactory parental pentavalent antimonials<sup>2</sup> which are still the first choice for the treatment of many forms of leishmaniasis today.

Like Gaspar Vianna, Upendranath Brahmachari also made many other important scientific discoveries the reports of which are collected in two volumes under his authorship entitled *Gleanings from my research*<sup>3,4</sup> published by the University of Calcutta in 1940 and 1941. For interested scholars these volumes are available for consultation in the Library of the Núcleo de Medicina Tropical e Nutrição, Universidade de Brasília, under the accession numbers 1401 and 1402. I am grateful to Dr. Leonard Goodwin for a generous gift of these volumes.

### REFERENCES

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