autopsy is 500 gms, with many running as high as 700 to 750 gms.

The point I wish to make, then, is that the lethargy, the shiftless attitude and general lack of well-being of the people of the Amazon Valley can not be blamed on any one condition. Where adequate mosquito control and adequate quinine are available, where vermifuges are freely and frequently given, and where the native has money with which to purchase adequate food, his physical status becomes remarkably better. Dr. Colin Beaton and myself have papers in preparation which will enlarge on the points made here.

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SCIENTIFIC BOOKS

THE LIFE AND WORK OF PROFESSOR WILLIAM HENRY PERKIN[1]

THE gods are not always kind to parents, but British parents are on their preferred list. The Darwins, the Huxleys, the Haldanes are familiar to all of us. And now to this list must be added the Perkins. Perkin, the founder of the coal-tar industry, was the proud father of three well-known chemists; and one, in particular, the subject of this memoir, became the leading organic chemist of his day in England. The boy started badly. He "flunked" the London matriculation examination, largely because of his dislike for Latin and Greek. But when he did enter the Royal College of Chemistry in 1877 (at the age of 17) he showed sufficient manipulative skill in the laboratory to attract the attention of the professor, Edward Frankland. In those days in England (and in America), however, to be a chemist without the background of a German university training was to be no chemist at all; and despite some religious scruples (for the elder Perkin was a God-fearing man and looked with some disfavor upon the semi-atheistic views promulgated by some of the German *professoren*), the young Perkin was sent to Würzburg to study organic chemistry under Wislecenus, a great investigator and a greater teacher. In 1882 Perkin received his Ph.D. for an investigation dealing with the action of alkali on oenanthaldehyde.

That same year he transferred to Munich, to study further under the king of organic chemists, Baeyer. At this time Otto Fischer, Königs, Friedlander and Curtius were in Munich for the same purpose. It was here that he did his work on ethyl benzoylacetate, the analogue of ethyl acetoacetate—a work which earned him the title of *Privatdozent*. It was here also that he started work on three-, four-, five-, six- and seven-membered carbon rings—at the time a task of no mean proportions, seeing that even men like Victor Meyer, Emil Fischer and Baeyer himself were of the opinion that only six- and at best five-membered rings were possible. Perkin's success led Baeyer to develop his "Spannungs Theorie," which associates the extent of stability of a cyclic structure with the strain set up in the molecule by the alteration of the value of the tetrahedral angle necessary to form a ring.

After six years in Germany, Perkin returned to England and in 1887 was appointed professor of chemistry at the Heriot-Watt College, Edinburgh, with Kipping for his demonstrator. Here he entered the field of alkaloid chemistry by investigating the constitution of berberine. In 1892 he was appointed professor of organic chemistry at Owen's College, now the Manchester University; and here he remained active for the next twenty years. It was during these years that he contributed to the chemistry of camphor, only to be forestalled, to some extent, by Komppa. He was also busy with a study of terpenes, those derivatives of *cyclo*-hexane containing unsaturated linkages. Many synthetic terpenes were prepared by him from various keto-acids with the aid of the Grignard reagent. The dye-wood products, brazilin, $C_{16}H_{14}O_5$, and hematoxylin, $C_{16}H_{14}O_6$ (the latter a hydroxy-derivative of the former), carbon ring compounds and various alkaloids formed further objects of study. Together with Kipping, Perkin published his well-known organic text-book in 1894, and a somewhat corresponding inorganic text in 1909.

In 1912 Perkin was appointed to a chair of chemistry at Oxford. Such was the state of the sciences at that great institute of learning that for a time Perkin remained the one and only professor of chemistry at Oxford! Later, Soddy and others joined him. At Oxford he supervised the building of a new chemical laboratory, known as the Dyson Perrin's laboratory, which is considered to be one of the best equipped of its kind in all England. Its present director, Professor R. Robinson, the great authority on plant pigments, has made this laboratory known to all students of organic chemistry.

Perkin died in 1929.

A list of Perkin's collaborators, assistants and students is a list of English chemists of the very first rank. Among them we have A. G. Perkin, Kipping, Haworth, Bone, J. F. Thorpe, Weizmann, R. Robinson, Pope and Sedgwick.

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