## RAUWOLFIA SERPENTINA

*RAUWOLFIA SERPENTINA*, an ancient Indian plant with almost legendary use, is causing much stir among medical scientists the world over. The varying effects of the crude drug, in use for divergent ailments, is sought to be explained by recent extensive study by chemists, pharmacologists and clinicians. Like crude opium, the plant is capable of yielding several active principles, which should partially explain the divergent results. A recent issue* of the *Annals of the New York Academy of Sciences* contains comprehensive information on different aspects of the drug and describes the chemistry of the drug, its several alkaloid and non-alkaloidal active principles, pharmacology of a few separated active principles, the endocrine aspects of the drug, its clinical application, etc.

The main value of *Rauwolfia serpentina* today is for reducing blood pressure, when pathologically raised. The active principles so far studied seem to act centrally on the brain, as a sedative and also peripherally through autonomic and other mechanisms.

The elucidation of the exact mode of action of distinct active principles of *Rauwolfia* has been a subject of study in several pharmacological laboratories and clinical units. The issue referred to should therefore provide useful material not only as background but for further elucidation of the subject. The value of the compound should be established by findings of independent workers in the field and not only by manufacturing concerns interested in it from a commercial point of view.

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* Vol. 59, Art. 1, pages 1-140. By F. F. Yonkman and 34 other specialists.

## ELECTRONIC TRANSLATION

RUSSIAN was translated into English by an electronic 'brain' recently for the first time, in a demonstration at International Business Machines Corporation, World Headquarters in New York. Brief statements about politics, law, mathematics, chemistry, metallurgy, communications and military affairs were submitted in Russian to the giant computer IBM 701, which turned the sentences into easily readable English within a few seconds

The first step in preparing the electronic computer to repeat this human performance of a mechanical task was to write electronically, in plus and minus charges on a magnetic drum surface, 250 Russian words and their equivalents in English. Wherever a Russian word had more than one meaning, each meaning was given a rulesign. This set of electronic words then constituted the dictionary to which the 'brain' could refer.

The second step in preparing the IBM 701 to translate was to store detailed instructions each of which have a one to one correspondence with electrical charges on the faces of cathode ray tubes in the computer.

Students of language are now for the first time justified in undertaking serious study of language from a mechanical point of view. They have practical reason now for trying to find out how language actually functions.

## COLOR X RAY PHOTOGRAPHS

THE procedure for taking colour X-ray photographs was recently explained to the IRE Convention by Professor R. Stuart Mackay of the University of California. By taking three ordinary X-ray pictures of a part of the body, each time using a different wavelength or energy, and then combining these pictures by projecting them through different colored filters, a single multi-colored image or photographic print results. More exactly, the differences in X-ray absorption characteristics are converted into visible colors.

Professor Mackay also described a related process for locating a given chemical element in a body Here, one alternately observes the body by frequencies slightly higher and lower than the characteristic absorption. The difference in intensity is essentially a measure of the one element alone. A typical application would be the use of an iodine tracer inserted in the body to map out a particular organ. In ordinary X-ray pictures, blackening from the tracer might not be noticeably different from that of the surrounding body, but the color pictures would show it up.