

current of 10 micro-amperes can be obtained with a well-designed ion source, which may be of the hot filament, low voltage or the capillary arc type. The ion beam is separated into its mass spectrum by an electromagnet.

Since concentric electrodes surrounding the charged dome give rise to a more uniform gradient and since high pressure air withstands higher gradients in shorter gaps the use of concentric electrodes increases the spark-over voltage. The available voltage in the latest type of pressure generator housed in a tank (20 ft. \times 5½ ft.) at Wisconsin¹² is found to increase from 2.6 to 3.5 M.V., using an arrangement of concentric electrodes.

The voltage is generally measured by means of a generating voltmeter.¹³ In one type, the alternating current generated by a spinning disc is measured by a sensitive galvanometer after rectification by a commutator. Fig. 2 gives a sketch of the arrangement used with the generator at Pasadena. Calibration is usually performed using the 440 K.V. peak of gamma ray resonance of the lithium-proton reaction. The sharpness of

the proton induced neutron emission reactions indicates that they also may be useful for calibration in high voltage work.¹⁴

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MANUFACTURE OF DRUGS FROM INDIGENOUS RESOURCES

“BORIC acid for the Medical Stores Department, hitherto obtained from England, may shortly be manufactured in India. It is proposed to purchase crude borax, imported from Tibet, and arrange for the manufacture of the boric acid. Another imported article, tablets Magnesii Sulphas 40 grains, is being manufactured by one of the Medical Stores Depots.

“Peptone powder, used as a culture medium, has hitherto been obtained from England. It is now manufactured in India.

A sample has been tested by the Military Laboratories and found to be a suitable substitute for the imported article. Accordingly the article has been transferred to the list of indigenous articles.” It may be added that Mr. B. N. Sastry and his colleagues working at the Indian Institute of Science, have perfected a process for the manufacture of peptone from fibrin by subjecting the material to the action of integrally pure papain.