

Nous avons pu montrer de cette manière³ que le pouvoir de resynthèse de l'ATP d'homogénats hépatiques de rats en crise de béribéri était très fortement diminué, que nous prenions du citrate, de l' α -cétooglutarate ou du succinate comme substrats d'oxydation. En mesurant la respiration des homogénats et en dosant les phosphates inorganiques et labiles du système d'incubation, nous avons pu établir que les quotients P/O d'oxydation phosphorylante étaient également abaissés pour les homogénats de foie de rats carencés en aneurine.

Les déterminations de substances marquées avec des radioisotopes et séparées par chromatographie sur papier ont une très grande importance en biochimie médicale; ainsi l'appareillage décrit a été employée pour la séparation d'hormones thyroïdiennes marquées au I^{131} et d'autres métabolites rendus radioactifs⁴.

Nous remercions vivement le Fonds National Suisse de la Recherche Scientifique qui a subventionné le présent travail, ainsi que la maison Hoffmann-La Roche, à Bâle, qui a gracieusement mis à notre disposition les animaux normaux et carencés.

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Summary

We have briefly described an apparatus which permits us to register quantitatively different substances labelled with radioactive isotopes, formerly separated by paper chromatography. We were able to show by the Krebs' method, thus simplified, that the oxidative resynthesis of ATP is diminished in the hepatic homogenates of rats during a beri-beri crisis.

³ J. FREI, *Helv. physiol. Acta* (sous presse).

⁴ A. VANNOTTI, S. CRUCHAUD, J. FREI et CH. MAHAİM, *Bull. Acad. Suisse méd.* 11, 28 (1955).

PRO LABORATORIO

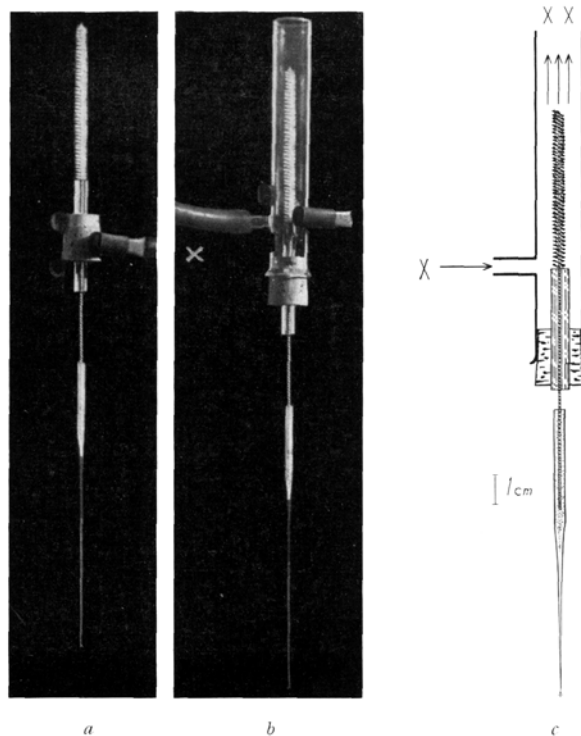
A Simple Stirring Device for Test Tube Work

In this laboratory, the need arose for a very simple arrangement allowing mechanical stirring of 5–10 ml samples in test tubes immersed in a water-bath. Since the device as finally used calls for such simple means, and has been found to work so reliably, this report would seem to be justified.

A current of air is used to propel the "turbine" of the stirrer. The arrangement of the moving parts is shown in Figure 1a. A small test-tube brush, the length of the brush itself being 80 mm and the width 5 mm, is fitted by means of the shaft, cut off to approximately 110 mm, into a capillary glass tube of slightly larger bore. This capillary, which is approximately 45 mm in length, passes through a 16 mm wide cork. The brush must be of good quality with stiff, "clean" bristles. A glass tube of roughly the same bore as the capillary is drawn out to an appropriate length to form the stirring rod. The glass tube is filled with molten paraffin by suction through its

capillary end, and fastened to the free end of the brush shaft by allowing the paraffin to solidify after insertion of the slightly warmed shaft; the capillary end of the glass may be melted in a burner and formed as desired.

Figure 1b and c shows the "turbine" fitted into a 16 mm test tube, the bottom of which has been cut off, for vacuum work. The side tube is connected ($\times$) to the laboratory compressed-air supply. It seems advisable to bend this side tube, so that the air has to enter the main tube at an angle. The stirrer will start to rotate at very low pressures, easily maintained by an ordinary laboratory compressor.



The same stirrer can also be propelled by the current of air produced by an ordinary water-jet pump. The pump is connected to the upper end of the main tube (at $\times$), and a short rubber tubing is attached to the side inlet tube ($\times$). This side tubing must be clamped off to secure not too heavy a stream of air through the main tube, otherwise the brush will be lifted up from the capillary and pressed against the upper sealing, thus preventing the free rotation of the "turbine".

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Zusammenfassung

Ein einfach herzustellendes, luftgetriebenes Umrührgerät für kleinere Flüssigkeitsmengen in Probierröhrchen wird beschrieben.