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Fig. 1. Photograph of a pile of copper plates subjected to the impression of the steel sphere <sup>in</sup> of a Brinell press. It is clear that the thickness of the upper plate in the center of the hole has been slightly reduced and that all-round <sup>(hydrostatic)</sup> compression does not therefore take place here.

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by the impression method, and also on the results of tensile tests (giving the tensile strength  $\sigma_B$ ). We feel that such tests may be of great practical interest, since the views of Rehbinder have received widespread attention.

In order to check the possible effects of surface-active substances on hardness we made a number of comparative measurements of ~~the~~ "impression" hardness and microhardness on various materials both in the dry state and after wetting with various surface-active media.

If, as stated by Rehbinder and his colleagues, there were really any effect of surface-active materials on the mechanical properties, the "impression" hardness (being a function of such properties) then ~~undoubtedly both the hardness and the microhardness with respect to impression~~ would certainly have a different value when measured in a surface-active medium, and this effect would be especially noticeable when measuring under small loads (i.e., when measuring microhardnesses).

It is sometimes said that the results of measurements of "impression" hardness cannot be sensitive to the influence of surface-active substances, since in such ~~tests~~ mechanical tests