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Peltier Effect in Single Crystals of Bismuth

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air for a short time, the conductivity decreased slightly but when exposed for about twenty-four hours the conductivity had increased to nearly double its former value.

Bubbling air through the oil at ninety degrees Centigrade, which destroys the vitamin A content, almost halved the conductivity.

Experiments to determine whether the oil is photo-electric under the action of ultra-violet light gave negative results.

The specific resistance of the oil appears to vary from 10^{10} ohm cms. to 10^{13} ohm cms. according to the brand of oil tested and its previous treatment.

IOWA STATE COLLEGE,
AMES, IOWA.

THE DIFFUSION OF THE ACTIVE PARTICLES IN THE RUSSELL EFFECT

JAY W. WOODROW

The diffusion of the active particles from hydrogen peroxide and from cod liver oil when oxidized through various apertures and tubes of different lengths has been measured by their action upon standard photographic plates. The relative densities of the images produced were measured by means of a microphotometer.

For circular apertures the effect increased less rapidly than the increase in the area of the opening. This result is even more prominent in the case of slits and grids. The amount of active material diffusing through the air in glass tubes of various lengths increases very much more rapidly than the decrease in the length of the tube.

Measurements on the size of the images shows that the scattering by air is greater a couple centimeters from the surface of the liquid than near to it.

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AMES, IOWA.

PELTIER EFFECT IN SINGLE CRYSTALS OF BISMUTH

H. D. FAGAN

Some preliminary data on the Peltier Effect in bismuth single crystals have been obtained. The reference metal used is copper. The results so far obtained seem to be in fair agreement with the

data computed from the thermal e.m.f. measurements of Boydston and Bridgman.

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IOWA CITY, IOWA.

IMPROVED APPARATUS FOR GROWTH OF METAL CRYSTALS

A. G. HOYEM

The availability of a small quantity of exceedingly pure zinc has made it necessary to design apparatus of such a nature that a series of crystals may be grown with predetermined orientations, distributed at intervals of several degrees from 0° to 90° , and without oxidation or waste of the material. The design and working of the apparatus is described.

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IOWA CITY, IOWA.

THOMSON EFFECT IN SINGLE CRYSTAL ZINC

L. A. WARE

Results for a series of crystals made from Kahlbaum zinc are much more constant than any previously reported by the writer. The Voigt-Thomson symmetry relation appears to be satisfied for the Thomson Effect. The specific resistance and temperature coefficient of resistance have also been measured for all the crystals.

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IOWA CITY, IOWA.

A SPECTROPHOTOMETRIC STUDY OF THE COLOR OF MEATS

A. A. BENEDICT

The rapid change in the color of meat when exposed to the air has made it very difficult to make accurate comparisons of the colors of different samples. During this investigation it was found that this change could be prevented by placing the sample of meat between glass plates immediately after cutting. A comparison of the intensity of the light diffusely reflected from various cuts of