

## Beryllium for Aircraft

Beryllium, a light metal now worth \$200 a pound, is likely to find commercial utilization in future aircraft construction, Dr. W. H. Gillett, director of the Battelle Memorial Institute, Columbus, Ohio, predicted in a report to the American Electrochemical Society.

Although now in the rare metal class, beryllium, on account of its light weight, a third that of aluminum, would allow decreases in the weight of aircraft. Designers have estimated that it is worth \$40 to reduce the weight of an airplane one pound.

Rare as the metal is today, Dr. Gillett declared it could be obtained in quantity and at a price of about \$25 to \$50 a pound if there was demand for it. Geologists estimate that there is as much beryllium by weight in the earth's crust as there is lead or zinc, and much more by volume.

Due to its present high cost, little is known about beryllium's ease of fabrication and endurance. It is known to have a higher modulus of elasticity than other light metals and this property, nearly equal that of steel, promises to allow aircraft designers to use methods of construction not now possible.

Dr. Gillett declared that aircraft producers interested in a new material would do well to make a thorough investigation of this metal about which little is now known.

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## Light for Artists

Synthetic daylight electrically made was urged as a substitute for the traditional north skylight favored by artists for color matching when A. H. Taylor, physicist of the National Lamp Works at Cleveland, presented to the Illuminating Engineering Society observations that show that daylight from the northern sky, far from being standard, actually varies in intensity and spectral character from hour to hour and from day to day.

White light, corresponding to noon sunlight on a clear day in summer, was suggested by Mr. Taylor as the proper standard.

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## New Tests for Fever Carriers

A simple new test for detecting carriers of scarlet fever was described by Dr. Ruth Tunnicliff of Chicago before the American Public Health Association at Minneapolis. The test was devised to identify the organism of scarlet fever, and is well adapted for use in detecting carriers. By this test the organism can be identified in from 24 to 48 hours after the culture is made.

Results of a study of Drs. William D. Frost and Myrtle Shaw with R. C. Thomas and Mildred Gumm, from the University of Wisconsin, of the organism that causes septic sore throat were also presented to the Laboratory section. Severe epidemics of the diseases have been caused by infected milk. The organism may get into milk by outside contamination or it may come directly from infected cows that have a condition known as mastitis. In the latter case, these scientists found that the cows do not always show any symptoms of mastitis. This may be an important factor in the start of the disease even in communities where there is milk inspection. For four years the scientists have been making routine examinations of milk from all cows and of throats of all employees on farms supplying the Chicago district with certified milk.

"We have studied 17 cows, 8 from the certified herds and 9 from other herds, that were shedding *Streptococcus epidemicus* in their milk. About half of them showed no signs of clin-

ical mastitis, and there was such a slight abnormality in the cows and their milk, that it was quite evident they would not have been excluded from the herd for a considerable time by a clinical examination."

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## Music in the Air

A few years ago a scientific curiosity, now a musical instrument ready to take its place in homes and orchestras, such is the history of the invention of Prof. Thérein, a young Russian scientist, for literally extracting music from the air. The picture on our cover shows this new instrument in its latest form, as demonstrated at the recent New York Radio Show, preparatory to being placed on the market.

The air from which the music is drawn is the space between the hands of the musician and the antennae of the instrument. Everyone who fooled with radio in the early days of 1922 remembers the squeals that so often used to emanate from the loud speaker, or head phones. With many of the old regenerative sets, the squeal would start if the hand was brought near, in order to turn the dials. This, of course, was the result of the changing capacity between the parts of the set and the hands of the operator.

These squeals, that have long since been banished from radio, have been tamed by Prof. Thérein, and made to produce sweet melody. At no time does the performer touch the instrument, but merely waves his hands back and forth. Bringing his right hand towards or away from the vertical rod regulates the pitch, while the distance of his left hand from the loop on the side controls the volume. In this way a musical sound of any pitch or volume may be obtained.

One advantage of the instrument over those of the present day is that jazz cannot be played on it. Only a legato can be obtained, as one note runs into the next.

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