EARTH-BOUND

This is the Kiwi, famous in cross-word puzzles, and because of the officers in the World War air services who were so called because they did not fly.

ORNITHOLOGY

Kiwi, Bird That Supplies Aviation Nickname, Shown

KIWIS, wingless birds whose name is tossed as an epithet by aviators at the non-flying ground officers of their service, are now represented in a new exhibit at the Field Museum of Natural History. The group shows a kiwi standing guard over two disproportionately large eggs in its nest under a cycad bush.

The kiwi, a native of New Zealand, is one of the strangest-looking birds now living. Its wings have degenerated to mere internal nubbins of bone, its body is covered with long, fringy feathers that look almost like hair, and it has a long bill which it uses in probing for worms and in tapping, like a blind man, to guide it on its weak-sighted way.

It is about the size of a hen, but its eggs are ten times the size of hens' eggs. They weigh one-fourth as much as the bird that lays them.

In the kiwi family, it is the female bird that rules the roost. The male, a good third smaller than his mate, meekly sits on the eggs and broods the chicks. The hen takes over the defense of the nest if an intruder threatens. She kicks straight forward, like an ostrich, with her unfemininely large and strong feet, and since her toenails are hard and sharp she can inflict really nasty wounds.

Science News Letter, October 12, 1940

Prematurity causes one-half of the deaths among new babies.

PHYSICS

Chemical Treatment of Glass Makes It More Transparent

Photographic Lenses May be Speeded by Dissolving, With Nitric Acid, Oxides From Thin Layer of Glass

CHEMICAL treatment of glass surfaces can make them more transparent, members of the Optical Society of America were told at their meeting in Rochester. Frank L. Jones and Howard J. Homer reported on their researches at the Mellon Institute, Pittsburgh, which may have many important applications. Photographic lenses may be made faster in their operation, for example, or telescopes used at night by ship lookouts on the watch for enemy submarines will gather more light and show a clearer view.

Previously methods have been used for increasing the amount of light passing through lenses, thus decreasing the amount that they reflect, by applying thin films of another material. The method studied by Mr. Jones and Mr. Homer, however, treats the surface of the glass to form a film, by dissolving away the oxides from a thin layer.

"Such removal is possible without damage to the surface polish if the solvent does not dissolve silica," they reported. One of the best solvents, they found, was a weak acid solution, such as one per cent nitric acid, though solutions of salts, alkaline phosphates, melted salts and even water were found to show the effect.

Apparently it will hardly be safe for amateur photographers to attempt treating their own lenses without expert advice, for they found that glass surfaces not freshly prepared reacted in an uneven fashion. After the surface film is once formed, they said, "it can be processed in various ways that will render the surface unreactive, so that a second treatment will not appreciably change the thickness of the film."

Science News Letter, October 12, 1940

Lenses Change With Cold

AS AN AID to accurate aerial photography optical scientists were urged to obtain data showing the performance of lenses at very low temperatures by A. Francis Turner, of the Bausch and Lomb Optical Company. He said that a lens changes in focus by a fraction of one per cent with a change in temperature of 50 degrees centigrade, that is, of half the range from the freezing to the boiling point.

"Although such temperature effects are small," he stated, "they cannot always be ignored in the design of optical instruments, as for use in airplanes, where 40 degrees below zero centigrade (which happens also to be 40 degrees below zero in the Fahrenheit scale) may be encountered. A need is felt by the industry for more low temperature data on optical glasses."

Science News Letter, October 12, 1940

Brightness of Lamp Varies

IN MANY kinds of scientific work, a very constant source of light is needed, but with an electric lamp, variations in the current supplied to it may cause considerable changes in the light intensity.

Harold Stewart, of the University of Rochester, told the Optical Society meeting that he had used a special regulator. The voltage of the incoming electricity varied by several per cent, but the regulator cut it down to about 1/400 of one per cent. Even then, he said, the output of light varied more than 1/10 of a per cent, due to causes within the lamp itself.

By arranging an electric eye to watch the lamp and, in turn, control the electron tubes in the voltage regulator, he was able to secure light of more constant intensity.

Science News Letter, October 12, 1940