

AVIATION

Airplane of 1940 Envisioned By British Air Expert

BY 1940 aircraft engines will develop at least 1,600 horsepower in a single engine unit, it was predicted by the British aeronautical engineer, H. Wood, of Rolls-Royce, Ltd., before the meeting of the Society of Automotive Engineers in White Sulphur Springs.

By special invitation of the Society, Mr. Wood came from England to present recent advances in the art of cooling airplane engines with liquids—either water or the newer glycerine compounds.

Wherever modern airplanes are flown, cooling is a major problem, for in many cases airplane engines already overheat if operated on the ground for any length of time. Only at the high velocities of cruising flight is sufficient air drawn over the engine to give proper cooling. Liquid cooling used in the best English airplanes is in sharp contrast to the common American practice of using air-cooled engines.

The engine of high horsepower in the future, Mr. Wood intimated, will probably consist of many small cylinders to take advantage of the relatively increased cooling surface thus attained.

British aircraft engines—at least the major part controlled by Rolls-Royce—will continue to be liquid cooled in the future, Mr. Wood maintained. His invitation to speak, he declared, had been accepted in the spirit of a friendly challenge.

It has only been since the adoption by air-cooled engine manufacturers of the special engine cowling devised by the U. S. government's National Advisory Committee for Aeronautics that British airplane engine producers had had to worry greatly about the development of liquid-cooled engines.

Previously the small front area of "in-line" liquid-cooled engines gave a smaller air drag than the much larger radial air-cooled engines. With the cowling, however, air drag has become essentially comparable for the two contrasting engine types. Thus the liquid cooling advocates have had to revise their concepts.

Progress in English liquid-cooled engines, Mr. Wood admitted, has not been as spectacular as the American developments in air-cooled aircraft engines. The

rapid development of civil aviation in America has been instrumental in this fast development.

By contrast, the British authority pointed out, civil aviation in England is comparatively small and most engines have been built for the British Air Ministry for military purposes. The Air Ministry has maintained a balance between air-cooled and liquid-cooled engines resulting in the keeping of technical advantage to both.

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ARCHAEOLOGY

Learn China's History From Ancient Oracles

THE early history of China's mysterious Shang Dynasty, 1500 B.C., is being revealed by an ancient Chinese oracle.

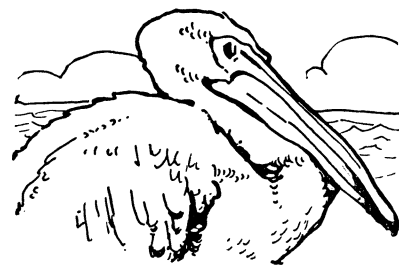
Importance of new discoveries connected with this oracle, in the Honan Province of northwestern China, was emphasized by Dr. A. R. Radcliffe-Brown of the University of Chicago, speaking before the central section of the American Anthropological Association meeting in Evanston, Ill.

Heretofore vaguely known by historical writings recorded long after the events happened, the Shang Dynasty is now speaking for itself, through contemporary writings. These writings, described by Dr. Radcliffe-Brown, are questions that early Chinese emperors inscribed on tortoise shell or bone, and brought to official diviners. By applying heat to the shell or bone, the diviner interpreted the cracks that formed from the heat, and answered the questions accordingly.

The questions of the Emperors and others are very revealing, as to the state of affairs in that ancient time in China. The oracle was questioned regarding wars, planting of crops, and other important matters, and since there was no reason to exaggerate or distort the truth, scholars are at last checking up on the extravagances and doubtful features ascribed to that period.

The inscriptions are serving as new sources of information for the study of ancient forms of the Chinese language, Dr. Radcliffe-Brown also reported.

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Fishers With Dip-Nets

MISTAKEN notions still prevail about the function of the pelican's beak. Even now, probably, a majority of people accept the dictum of the ancient profane limerick, that "he can store in that beak enough food for a week."

Actually, the pelican stores nothing in his capacious pouch. What he catches he swallows. At the home nest, the young pelicans are regaled with fish regurgitated from the parental stomach. Messy, no doubt; but the pelicanlets don't seem to mind.

What, then, is the pelican's pouch used for? Simply as a dip-net, a necessary fishing implement, ornithologists tell us. Pelican Pete, sailing his majestic way over the waters, sees a fish. Swoop! goes his head, with the big-pouched beak distended. And the fish is caught exactly as with a dip-net.

White pelicans, which live exclusively in the West, are surface fishers. They swim along, seeking their prey as they go. Sometimes a whole row of them will go fishing at once, driving a school of fish before them with a great beating of wings and dipping up every one that comes close enough to the surface.

Brown pelicans, which are the common Eastern and Southern species, fish on the wing. When one sees a fish within grabbing distance of the surface, he makes a nose-dive for it, beak open, and scoops it in. The pouch of the brown pelican, which thus depends more on marksmanship than on a wide sweep of the net, is much smaller than that of the white pelican.

Colonies of pelicans that winter in Lower California waters sometimes have their nesting places where you would least expect them. One group nests on a couple of tiny islands in Yellowstone Lake, about 7,500 feet above sea level.