therefore probably humans, are replaced as the animals age by cells that are less specialized. They are also, many of them, more resistant to poisons. Tissues of animals that have been severely poisoned and have recovered from their hurts are also less specialized than usual and are more resistant to poison. Add the two together and it spells a clue to what happens inside the body when the body grows old.

This was the gist of the second 1937 Chandler Memorial Lecture. Speaking in the same lecture hall used by Charles Frederick Chandler, pioneer American chemist who was born a hundred years ago, Dean MacNider summarized tissue experiments he has been conducting for several years.

Uranium, radioactive metal, and chloroform were the two poisons tried by the North Carolina medical man. Heavy doses of uranium salts were given young dogs in his laboratory. Many died, but some recovered. They were then starved and placed under chloroform. Unlike the ordinary dog, their livers were not seriously damaged by the chloroform, which is a violent liver poison.

The same results were obtained when old dogs (who were not first poisoned with uranium) were placed under chloroform, he stated. Examination of the old dogs' tissues and of the cells that had repaired the damage to the livers of the young dogs that had been poisoned revealed that they had one other thing in common besides the ability to resist chloroform.

They both had cells that were less specialized than usual.

Science News Letter, October 30, 1937

There has been no census taken in Tibet since the Chinese counted the people in 1737.

Government experiments indicate that clothes moths are not disturbed by air scented with cedar, dried lavender, tobacco, tar, pine oil, cedar oil, or camphor.

AVIATION

Improved Propeller Design Will Cool Airplane Engines

Speed of Airflow During Ground Checking of Engine Is Slower Than During Flight; New Feature Corrects

THE National Advisory Committee for Aeronautics has recently released results of study by its scientists on one of the problems of modern airplane operation; the overheating of airplane engines in low-speed flight and on the ground.

Before taking off, the pilot of an airplane must taxi into position and open the throttles of his engines wide while holding the airplane still with the brakes to check the satisfactory operation of the engines through observation of his instruments. During this process the speed of air flow over the engine is much slower than occurs in normal flight, since the airplane has no forward speed through the air. Likewise, after taking off the airplane must climb at a slow air speed before setting out on its journey at normal cruising speed, and in this climbing condition there is relatively little forward speed to provide air flow over the engines.

Under these low forward speed conditions, engines while developing almost full power have a bad tendency to overheat, owing to the well-known fact that the cooling depends largely on the speed of the air flow past the engine or radiator. The airplane designer must thus rely on the propeller to provide the necessary flow of cooling air during take-off which is normally provided by the much higher speed of flight in cruising.

Scientists Theodore Theodorsen, M. J. Brevoort, and George W. Stickle, of the N. A. C. A. laboratories, have found that conventional propellers with well-rounded cross-section at the point where they are attached to the propeller shaft are not effective in providing the desired flow of cooling air. Studies made in a large wind tunnel at Langley Field especially designed for full-scale studies of propellers show that propeller and spinner shield designs allowing the greatest efficiency of flight at cruising speeds are usually unfitted for cooling at air speeds well below cruising. Greater attention should be given to the airfoil, or cross-sectional, shape of the propeller blades near the central hub, the N. A. C. A. scientists have concluded.

The three-man research team also designed a simple radial blower fan to be mounted ahead of the engine like an automobile fan, which when attached to the mounted engine and propeller greatly increased the efficiency of engine cooling. This combination, however, is not considered desirable for actual flight conditions because it increases the weight of the airplane and absorbs some of the engine power that could otherwise be used to produce a higher speed of flight.

A propeller design of proper cross-sectional shape, they point out, can accomplish almost as great an amount of engine cooling when the engines are developing nearly full power with the airplane at rest on the ground or flying at a low air speed.

Science News Letter, October 30, 1937

ARCHAEOLOGY

Chinese Minds Invented Arabian Nights Wonders

SOBER-minded Chinese—not Greeks living in Egypt—were the world's first alchemists, it appears.

Chinese thinkers tried to compound a pill of immortality, and to make silver and gold, long before Europe's alchemists went to work on similar fascinating problems.

More than that: Imagination of the Chinese alchemists soared out to conquer time and space. They devised ways for changing their forms at will, and for spiriting themselves over great distances in an instant. And what are those but powers of the "Arabian" jinni, who appear and vanish and perform wonders in the Arabian Night tales?

The theory that Europe got alchemy from China has been advanced before, but without getting much attention. Prevailing theories have gone no farther back than Greeks, Persians, and Arabs in tracing origins of this wonder-working art.

But there is new evidence. For two chapters of China's most revered treatise