MEDICINE

New Rheumatism Drugs

➤ EXCITEMENT IN the world of arthritics and their doctors centers around four new anti-rheumatism drugs. The four are aldosterone, fluorohydrocortisone, metacortandralone and metacortandracin.

Hundreds of patients have now been helped by some of these new drugs and three of the four show much greater anti-rheumatic effect than cortisone and hydrocortisone.

To the medical men, however, the really exciting, hopeful thing is that chemists can make more powerful antirheumatics than cortisone and hydrocortisone and can even, it now appears, make them without many, if any, side effects, which have been observed when the older chemicals were administered.

When cortisone was first announced, the difficulty of producing this adrenal gland hormone in quantity limited the number who could receive its pain-banishing, joint-easing benefits. As production difficulties were being overcome, doctors were finding other limitations to cortisone for rheumatoid arthritis patients. Moon faces on patients taking the drug for some time were among outward signs of body chemistry changes serious enough to make it necessary to stop the drug or reduce the dose even though arthritis symptoms came back.

Chemists, meanwhile, were working both to produce cortisone synthetically and to produce related drugs that might be even better medicine for rheumatoid arthritis victims.

At the Mayo Clinic, Rochester, Minn., Dr. Philip S. Hench, co-discoverer of cortisone and Nobel Prize winner, and a number of his associates have been trying out two of the new anti-arthritis drugs. These two are aldosterone, also called electrocortin, and fluorohydrocortisone. The first is an adrenal gland hormone. The second is hydrocortisone with the chemical, fluorine, incorporated into it.

Aldosterone proved not to have any antirheumatic effect in arthritis, they reported in *Proceedings of Staff Meetings of the Mayo Clinic* (Dec. 22, 1954). This might have been guessed from its chemical make-up, because it lacks what seems to be the very thing that gives antirheumatic power to cortisone and hydrocortisone, that is a hydroxyl group at the C-17 position. If this could be added, aldosterone might become antirheumatic.

Fluorohydrocortisone has the hydroxyl group at C-17 and it has antirheumatic activity. In fact, on a weight basis, it seems to be ten or more times more antirheumatic than cortisone or hydrocortisone, the Mayo Clinic and other scientists have found. Unfortunately, this good feature is offset by its causing much the same undesirable effects on salt, water and potassium in the body that cortisone has.

Metacortandralone and metacortandracin seem to have less of these undesirable effects, although they show three to four times the antirheumatic and anti-inflammatory effect of cortisone and two to three times that of hydrocortisone.

These synthetic chemicals, made by chemists at Schering Corporation, Bloomfield, N. J., were given their initial tests on patients by Dr. Joseph J. Bunim and associates at the National Institutes of Health, Bethesda, Md.

In the last few months, many other doctors have been using these chemicals on a trial basis and perhaps a thousand or more patients have gotten the drugs. So far, results have all been good.

However, in a report to the *Journal of the American Medical Association* (Jan. 22) Dr. Bunim cautions that patients have not been treated long enough to know the true value of the drugs. A year or two or more may be needed for that.

As Dr. Bunim and associates said of the drugs they tried, their synthesis "gives us reason to believe that the search for a more effective therapeutic agent (remedy) is not without promise." Dr. Hench and associates conclude their recent report by saying that the new drugs strengthen "the hope, indeed the conviction, that from the continued development of new synthetic" chemical relatives of cortisone "superior compounds will be made available for the control of rheumatoid arthritis."

Science News Letter, February 5, 1955

AERONAUTICS

To Test Plane With Magnesium Fuselage

➤ AN EXPERIMENTAL plane with a magnesium fuselage is scheduled for its first flight tests at Mitchell Air Force Base, New York, in February.

The specially designed F-80C is one of two magnesium-hulled aircraft ordered by the Air Research and Development Command. A previous model was successfully static tested at the command's Wright Air Development Center in Dayton, Ohio.

Engineers explain that the advantages in the use of magnesium, a light metal, are that the substance is probably the best substitue for aluminum and that the supply of the metal is nearly inexhaustible.

The thicker skin structure of the aircraft is expected to cut production and maintenance costs. Designers also point out that it is probably the most efficient light structural material where buckling is the controlling design consideration.

When aluminum became scarce in World War II, progressively more magnesium was used in airframes on an experimental basis.

The F-80C tests are scheduled in an effort to determine the complete suitability of magnesium for fighter planes.

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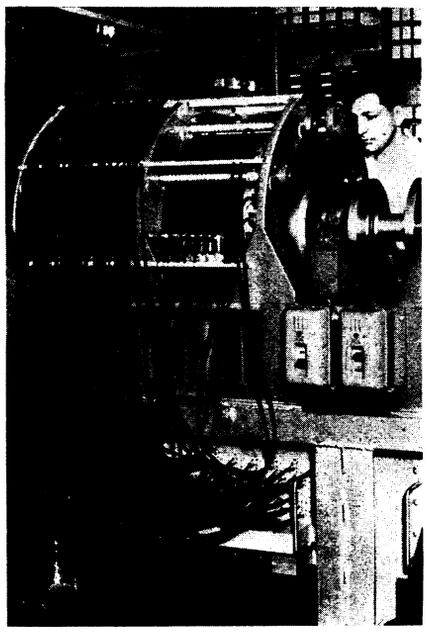

NEW JOB—One of the "memory" units of the Reservisor, an airline device that now can automatically provide late information about take-offs and arrivals, is shown. Each transmission takes a fraction of a second.

ENGINEERING

Electronic Brain Tells When Planes Arrive

➤ THE SAYING that if you are more efficient than you have to be, you will just get more work to do, holds true for electronic "brains" too.

An airline device in New York which has been doling out instant nationwide reservation information was found to have some "brain power" that was lying idle. So engineers have given it a new, extra job.

The Reservisor is the machine's name and it will now also store on its magnetic drum "memory" up-to-the-minute information on arrival and take-off times for American Airlines flights. The conventional system used up until now has been a time-consuming, hand-to-hand operation.

In the new system, facts are sent to the Reservisor about plane schedules with a special keyboard. Each transmission takes a fraction of a second. Late changes can be made after the machine's reserve drum space is loaded with coded information.

When the reservations agent receives a telephone query, for instance on what time flight number 40 will arrive, all he does is press a set of buttons and "ask" the Reservisor. Electronically, the machine searches its magnetic drum and flashes the answer back to the agent. On arrivals, the reply tells whether the flight is on time, and if not when it is expected.

As flight information is fed into the equipment, it is immediately available.

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