

MEDICINE

Germ Danger Greatest in Early Use of Cortisone

► PATIENTS getting cortisone for arthritis or other diseases should be especially protected from germ infections during the early stages of the cortisone treatment, Drs. T. Nicol and R. S. Snell of King's College, London, warn in *Nature* (March 3).

Their warning is based on the finding that cortisone depresses the activity of the body's scavenger cells, the reticulo-endothelial macrophages, especially in the spleen. This seems to be the way the body's defenses against invading disease germs are lowered.

The defensive reticulo-endothelial system, however, recovers to about its normal level after the initial marked depression in the early stages of cortisone treatment.

The findings were made on guinea pigs given a dye that the reticulo-endothelial system normally would detoxify. Depression of the system in the first two weeks of cortisone treatment of the guinea pigs and subsequent recovery were shown by how the system handled the dye.

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MEDICINE

Arthritis Remedy Aids Hay Fever Patients

► GOOD RESULTS with what is believed the first use of a new chemical relative of cortisone for nasal allergy, or hay fever as the layman would term it, are announced by Drs. Jack R. Anderson and Henry D. Ogden of New Orleans in the *Annals of Allergy* (Jan.-Feb.), official publication of the American College of Allergists.

The cortisone relative they tried is prednisolone. This new compound was first announced less than two years ago as a potent drug for relieving arthritis. (See SNL, Nov. 13, 1954, p. 312.)

Now it is reported a "rapidly acting and highly effective medication for topical use in the treatment of nasal allergy."

The drug is used as a nose spray. An advantage of giving it this way instead of by mouth or hypodermic injection is that undesirable effects on the body generally are likely to be avoided.

Patients in the trial were told to give one squeeze of the plastic spray bottle into each nostril every half hour while awake. They did this for the first 48 hours. After this, they were told to reduce the dosage to one spray into each nostril four times a day.

At the end of one week, the 30 patients in the trials had a rest interval. Then they got another bottle of spray to use the same way for a week. After a second week's interval, a third bottle was given.

One bottle contained a dummy solution, or placebo, containing no prednisolone. The other two had prednisolone in different amounts.

The doctors did not know until the end of the tests which bottle was which. This

information was known only to the manufacturer, the Upjohn Company of Kalamazoo, Mich.

None of the patients who got the placebo showed any clearcut improvement that either they or the doctors could tell. All who got prednisolone reported various degrees of improvement that the doctors also found in examining them.

Although the number of patients in the trial is small, their careful selection as having true nasal allergy and the "double blind" test lead the two doctors to believe that the new drug is effective.

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ARCHAEOLOGY

Swanscombe Skull Still in Doubt

► SWANSCOMBE MAN is still a puzzle to scientists, despite the finding of a new skull fragment that fits on to the famous Swanscombe skull.

No one can say definitely whether this man, who lived in what is now Kent, England, some 200,000 to 300,000 years ago, was a true *Homo sapiens* type and therefore a direct ancestor of modern man, or whether he was a Neanderthal and hence a sort of uncle of ours.

This is revealed by Dr. William L. Straus Jr., anthropologist of Johns Hopkins University, Baltimore, in *Science* (March 9). While he was in England last summer, Dr. Straus was invited to examine the new skull fragment and to share in digging at the Kent site.

Dr. Straus says he "harbors no reasonable doubt" that the new fragment, found last July by Dr. J. Wymer, is another part of the same skull as are the fragments found 20 years ago by Dr. A. T. Marston.

Dating of the skull is also well established as of the second interglacial period, some 200,000 to 300,000 years ago. Near the skull fragments were also found remains of other mammals and flint tools of the middle Acheulean phase of Stone Age culture.

However, despite their great antiquity, the Swanscombe fragments are indistinguishable from the corresponding head bones of modern man. This has led "some enthusiasts" to believe as established fact that a true *sapiens* type lived in Europe at the same time or even before the Neanderthals.

This conclusion is premature, Dr. Straus states.

Other scientists have expressed the opinion that, when more pieces of Swanscombe Man have been unearthed, he will be found to be like Steinheim Man and thus Neanderthaloid rather than *sapiens*. This, Dr. Straus says, is just as much of a guess as the conclusion that Swanscombe was *sapiens*.

Dr. Straus is hopeful, however, that sooner or later Dr. Wymer and his associates will come across other and more critical parts of the Swanscombe skeleton and that they will reveal the Swanscombe's true nature.

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IN SCIENCE

GENERAL SCIENCE

Science and Engineering Preferred by Students

► A HIGH PERCENTAGE of the nation's college-bound youngsters want a career in science or engineering, the National Merit Scholarship Corporation has reported.

Of the 5,078 semi-finalists in the Corporation's nation-wide hunt for the most able high school seniors in all fields of study, 56% of the boys and 16% of the girls named science or engineering as their career goals.

More than a third of the girls want to be teachers and about ten percent of both boys and girls want careers in medicine or health sciences. Eight percent of both groups combined want to go into business, and law attracts another eight percent of the boys.

The final winners in the Corporation's selection will share \$3,000,000 in scholarships this year.

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GEOPHYSICS

Predict 1957 Will Bring Next Sunspot Maximum

► MID-1957 will bring the next high spot in the current solar cycle, Prof. M. Waldmeier, director of the observatory at Zurich, Switzerland, predicted.

An analysis of the increase in the number of sunspots during the last year and a half led Dr. Waldmeier to this conclusion.

For many years scientists have tried various formulas in attempts to forecast the ups and downs of sunspot activity. No formula has yet proved successful.

Dr. Waldmeier's prediction puts the maximum somewhat earlier than expected by the international group of scientists who planned the International Geophysical Year to coincide with the period of highest solar activity.

The IGY starts officially on July 1, 1957, and lasts for a year and a half, although some preliminary measurements for it are being made now.

Observations since the last low point in solar activity, which occurred in April, 1954, show a rate of increase in the number of sunspots that suggests there should be more spots than ever before visible during the next maximum, Dr. Waldmeier calculates.

With the peak expected in mid-1957, the length of the current solar cycle would be only 10 years, instead of the usual 11-year period.

Dr. Waldmeier calculated the intensity and exact time of the next high point from the rate at which solar activity increased at the beginning of the current cycle.

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CE FIELDS

PSYCHOLOGY

Chimps, Too, Get Tired of Toys

► CHIMPANZEES, as children do, like novelty in playthings.

A young chimp, when presented with a group of toys, will reach for one he has not seen before in preference to those he has been playing with earlier that day or even on previous days, Dr. W. I. Welker found at the Yerkes Laboratories of Primate Biology, Orange Park, Fla.

The chimpanzee has other reasons, in addition to novelty, for making a favorite of a particular plaything. He prefers round or rounded objects to those that are angular. He likes larger, brighter objects and those that differ from other toys in appearance.

The animal's age makes a difference in his reception of playthings. The younger chimp (three to four years old) is more responsive to all toys than are his elders (seven to eight years old).

The animals wanted to continue playing as long as new toys were periodically introduced, Dr. Welker observed. Details of the study are reported in the *Journal of Comparative and Physiological Psychology* (Feb.).

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PSYCHOLOGY

Single Men Show Good Attitude on Children

► SINGLE MEN in college show up well as prospective fathers when scored on attitudes toward child guidance, a study reported in the *Journal of Home Economics* (Feb.) shows.

The findings come from a survey including items such as:

"Children should be allowed to go to any Sunday School their friends go to."

"Parents are not entitled to the love of their children unless they earn it."

"Children should not be punished for disobedience."

The single men were asked whether they agree or disagree and how strongly or mildly with each of these and other statements. The entire test is known as the University of Southern California Parent Attitude Survey.

Scores of the single men were similar to those reported for parents of non-problem children and "markedly superior" to scores of mothers of problem children, obtained in other studies. They were not as good, however, as the "ideal" scores of clinical psychologists.

Single women in college scored much like the single men. Responses on the Ignoring variable showed there might be room for

some improvement in this attitude before the students become parents.

The Ignoring variable refers to a tendency to disregard the child as an individual member of the family, to think of a "good" child as one demanding least parental time, and to disclaim responsibility for the child's behavior.

The study of single men is reported by Dr. James Walters of Oklahoma A. and M. College, Stillwater, Okla., and Miss Barbara Bridges of Mississippi College, Clinton, Miss. The test was given to 207 men in these two colleges and in the University of Colorado, University of Connecticut, University of Oregon, Florida State University and Washburn Municipal University at Topeka, Kans.

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PSYCHOLOGY

Twins More Liable To Speech Defects

► TWINS are more likely to develop speech defects than non-twins. So are the younger children of large families compared to older children of the large families or those in small families.

This was the unexpected finding of a study by Dr. Benjamin Pasamanick of Columbus, Ohio, Miss Frances K. Constantinou, registered nurse of Baltimore, and Dr. Abraham M. Lilienfeld of Buffalo, N. Y. The study, made of records of 290 children born in Baltimore since 1940, is reported in the *Journal of Diseases of Children* (Feb.) published by the American Medical Association.

The children were all mentally normal and did not have cerebral palsy. The scientists had thought the records of these children might show complications of pregnancy and birth, prematurity or abnormal conditions of the newborn that might account for the speech defects.

However, no more of these conditions were found in the 290 with speech defects than in a similar number of normal children without speech defects.

Discovery of more twins and later-born—third, fourth or fifth—children in the group with speech defects leads the scientists to suspect psychological factors.

Twins who have more contact with each other than with older children learn from each other babyish, faulty ways of talking, the scientists think.

These faulty speech patterns become fixed in the twins due to their closeness and the fact that they can understand each other's impaired speech.

As to the younger children in large families, the scientists suggest "rivalries, disorganizations and frustrations in large-family living" as possible causes of the speech defects.

Older members of the family become impatient with the young children's talk, and mother may be too busy to pay enough attention to it.

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BIOCHEMISTRY

High Blood Sugar Slows Cancer Growth

► HIGH BLOOD SUGAR slows down cancer growth temporarily, at least in mice, Dr. Ralph McKee and Jo'Ann Jehl, University of California at Los Angeles physiological chemists, have found.

Mice were injected with alloxan, which acts on the insulin-producing mechanism in the pancreas, thus producing diabetes. Cancer was introduced into these same mice by injection of highly infective Erlich's ascites mouse tumor cells.

The rate of tumor growth at first was considerably slowed in the diabetic mice. As the tumor progressed and blood sugar was reduced, the tumor growth rate increased to that of non-diabetics, but in all cases, the cancerous diabetic mice live longer than cancerous non-diabetic ones.

Greater longevity was also observed in cancerous obese mice with higher than normal blood sugar but no diabetes.

Apparently the diabetic condition causes changes in life chemistry that interfere with the supply of some substance vitally needed for growth of cancer cells.

"If we can pinpoint this link in the chemical chain of events, it may suggest new chemotherapy for cancer," Dr. McKee reports in *Cancer Research*.

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AERONAUTICS

Unfamiliar Shapes Seen For Airplanes of Future

► LARGE SUPERSONIC AIRPLANES of the future will have unfamiliar shapes, a Boeing Airplane Company engineer has predicted.

George S. Schairer, one of the scientists responsible for designing the Boeing 707, U. S. jet transport scheduled to enter airline service in 1959, said aerodynamic requirements for most efficient supersonic flight would result in the unusual shapes.

High temperatures, and stability and control associated with supersonic flight, are the next problems to be faced, he told the Aviation Division Conference of the American Society of Mechanical Engineers meeting in Los Angeles.

High-speed airplanes will need very thin, comparatively wide chord wings for best supersonic cruising, Mr. Schairer said. A given size control surface will provide very much less control in high-speed flight than in subsonic flight.

"Creep" is also a problem. Wings might bend under load at high temperatures and remain permanently bent. Titanium metal shows desirable qualities and it may be used in sandwich form.

The pilot and other humans aboard future airplanes, Mr. Schairer said, are the most inflexible item of equipment from the point of view of temperature toleration.

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