

conducted by Dr. Frederick H. Seares of Mount Wilson Observatory with the assistance of Miss Mary C. Joyner, showed that this cloud which obscures the polar stars is 20 degrees in diameter. Our own solar system is close to, if not actually a little within, this obscuring matter.

Science News Letter, December 18, 1943

Light From New Stars

► **BETTER** to understand the luminosities of "new stars" and their evolution, a study of the expanding shells of some

of the nearer novae was made by Dr. Walter Baade, partly in cooperation with Dr. Milton L. Humason. Comparing a photograph of the "new star," R. Aquarii, taken this year with one made in 1921, Dr. Baade discovered that the outer shell of gas is expanding.

The line of a previously unrecognized element in the sun was identified as neutral gold, through the work of Drs. Arthur S. King and Charlotte Moore Sitterly. Dr. Harold Babcock and Mrs. Mary F. Coffen supported this evidence by observing that the gold line is strengthened in sunspot spectra.

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was retired last spring, has been appointed executive officer of the informational service of the division of medical sciences of the National Research Council, Prof. Ross G. Harrison, chairman of the Council, has announced.

The informational service has been established under a recent grant of the Johnson and Johnson Research Foundation of \$75,000 for the period ending June 30, 1945. The purpose of the grant is to enable the Council to assemble and disseminate as far as possible, medical information pertaining to the war effort. (See SNL, Oct. 23)

Science News Letter, December 18, 1943

DENTISTRY

Fluoride Reduces Caries

Tests prove that a two per cent solution of sodium fluoride is about 40 per cent effective in reducing the amount of dental decay in a group of school children.

► **PUTTING** a 2% solution of sodium fluoride on the teeth of a group of school children reduced by about 40% the amount of caries, or decay, in the teeth of these children during the following year, Dr. John W. Knutson, U. S. Public Health Service dental surgeon, and Prof. Wallace D. Armstrong, of the University of Minnesota, report in *Public Health Reports* (Nov. 19), official publication of the federal health service.

Fluorides in drinking water, it was discovered some years ago, will, if present in high enough concentration, cause the ugly tooth condition of mottled enamel. Lesser amounts of fluorides in the water, though failing to cause mottled enamel, apparently protect the teeth against decay.

Efforts to use fluorides locally instead of through the drinking water to control tooth decay have previously been made by other investigators on small groups of children, with apparently some success.

The group treated under the direction of Dr. Knutson and Prof. Armstrong numbered 289. Their teeth were compared at the end of the year following treatment with those of a control group of 326 children in the same schools. Before the treatment, children of both groups had been suffering about the same amount of tooth decay.

Only the teeth in the upper and lower left quadrants of the mouth were treated. There were 39.8% fewer new

carious teeth in the treated than in the untreated teeth at the end of one year. The treatment did not, however, prevent decay from attacking undecayed surfaces of teeth previously attacked by decay. In other words, about 40% of teeth that had no decay or cavities were protected from caries, but teeth that already had cavities or decay spots were not protected. If this is borne out by further studies, it means that the fluoride treatment can prevent decay but not arrest it once it has started. In that case, it probably is a more effective preventive than the 40% figure indicates, because undoubtedly, the scientists point out, some of the new caries developing in the treated teeth had started before treatment but was not far enough along to be detected when the teeth were examined before treatment was started.

The 2% solution of sodium fluoride used is highly poisonous and must be used and guarded with extreme caution, the scientists warn. Whether this is the weakest effective solution and whether eight treatments, the least number given in the study, are more than needed are among questions to be answered by further studies.

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MEDICINE

Former Surgeon General Heads Information Bureau

► **MAJ. GEN.** James Carre Magee, former surgeon general of the Army who

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