●RADIO

January 13, 4:00 p. m., E.S.T.
SAVING MINDS WITH INSULIN—Dr. Z. M. Lebensohn, St. Elizabeth's Hospital.

January 20, 4:00 p. m., E.S.T.
HOW SAFE ARE YOUNG DRIVERS?—Dr. Harry M. Johnson, Highway Research Board.

In the Science Service series of radio discussions led by Watson Davis, Director, over the Columbia Broadcasting System.

records for tests of patients. False diagnosis, it appears, might otherwise be made.

Dreams, apparently, come in more than one stage of sleep. The investigators found that in some cases the sleepers reported dreams when the brain-wave records showed neither alpha waves nor large delta waves. In other cases dreams occurred during the deeper stage of sleep when both delta waves and the 14-per-second waves were recorded.

Adoption Helps I. Q.

Children adopted into good homes as very young infants are likely to grow up with superior intelligence regardless of the intellectual and social deficiencies of their own mothers.

Babies coming from very poor homes and with own mothers of low intelligence levels were tested at the Iowa Child Welfare Research Station from one to five years after entering good foster homes. Prof. Harold M. Skeels reported the results to the American Association for the Advancement of Science.

No child scored below normal. More than half (65 per cent.) are of superior intelligence. No relation was found between the intelligence of the children and their true mothers.

Science News Letter, January 8, 1938

PHYSICS

New Gas Is Discovered High In Atmosphere of the Earth

Nitrogen Pentoxide, With Two Atoms of Nitrogen to Five of Oxygen, Is Probably Rarest of Gases in Air

A NEW and hitherto unknown atmospheric gas, a combination of oxygen and nitrogen, exists 10 to 25 miles above the earth's surface, Drs. Arthur Adel and C. O. Lampland of the Lowell Observatory, Flagstaff, Ariz., announced to the American Association for the Advancement of Science at the Indianapolis meeting.

It is nitrogen pentoxide, its molecule consisting of two atoms of nitrogen and five of oxygen. It is probably the rarest of gases of the air, present only in the outer regions where the ultraviolet rays of the sunlight bring oxygen and nitrogen into combination.

Existence of the new gas in the ozone layer of the atmosphere was demonstrated by delicate spectroscopy of the far infra-red region of the spectrum. If the new gas existed nearer to earth in the air around us, it would not be detectable by the most refined chemical and physical methods. Because the nitrogen pentoxide takes out certain portions of the sunlight as it comes through the atmosphere to earth, its existence could be detected.

The situation of Lowell Observatory high on a mountain in a dry atmosphere contributed to the discovery.

Science News Letter, January 8, 1938

PHYSICS

Existence of All Matter Rests on Intra-Atomic Force

THE EXISTENCE of all matter in the world is possible only because there exists an attractive force within atoms that acts only through a distance of less than a million-millionth of an inch. This estimate of the "radius of action" of this fundamental force of nature was presented by Prof. Gregory Breit of the University of Wisconsin in an address before the American Physical Society at Indianapolis.

Prof. Breit—who has been a leading analyst of the theoretical and mathematical implications of this basic force binding atomic particles into the nuclei of atoms, and hence makes possible all matter—reviewed the present knowledge of nuclear structure.

He reported on new measurements at the University of Wisconsin which give additional check on the small magnitude of the distance through which acts the binding force within atoms.

Quantitative experiments by Prof. R. G. Herb and his colleagues with the high-voltage, pressure-tank electrostatic accelerator at Madison have extended studies of atomic particles (protons scattered by protons) to energy ranges of 2,400,000 volts, said Prof. Breit.

These measurements extend to a new range of energy, the pioneering work of Drs. M. A. Tuve and N. P. Heydenburg and L. R. Hafsted of the Carnegie Institution of Washington on such proton-proton scattering.

The much higher voltage of acceleration employed by Dr. Herb's research