even closer in its resemblance to man than he had previously thought. He therefore proposes to alter its name accordingly to *Plesianthropus transvaalensis*.

From these three important discoveries—the Taungs skull found in 1925 by Prof. Dart, the Sterkfontein skull of which the first fragments were found by Dr. Broom in 1936, and the Kromdraai skull of which the discovery in 1938 is now announced—it is evident that there survived in South Africa so late as Pleistocene times a number of large-brained anthropoid apes which in certain details of their structure and especially in their teeth came close to man —all of them in fact, resembling man more closely than do either chimpanzee or gorilla.

As Sir Arthur Keith has pointed out, they are too late in time to come into the direct line of succession which leads up to man; but they indicate the lines upon which the earlier forms of anthropoid apes, from which they themselves were descended, must have been modified in the growth of the human tree.

Science News Letter, September 24, 1938

ASTRONOMY

Glowing Masses of Gases Found In Milky Way

Luminosities Containing Hydrogen and Oxygen, Too Faint for Photography, Found With Spectrograph

A GLOWING mass of hydrogen and oxygen gases, hitherto undiscovered, envelops large portions of the Milky Way, Drs. Otto Struve and C. T. Elvey of the University of Chicago's Yerkes Observatory reported to the American Astronomical Society.

These luminous nebulosities, in the constellations of Cygnus and Cepheus, are too faint to be recorded on direct photographs. They were found with the new 150-foot nebular spectrograph of the McDonald Observatory of the University of Texas in the Davis Mountains. Their existence could only be proved by means of spectrograms photographically sensitive to the light of the parts of the spectrum known as the hydrogen line alpha and the forbidden oxygen line 3727.

To an astronomer who could observe our vast Milky Way galaxy from some object far outside it, the spectrum of our galaxy as a whole would appear different from what astronomers supposed it would before the discovery by Drs. Struve and Elvey. It would reveal "a fairly strong emission spectrum superimposed over the integrated spectrum of all the stars."

The newly-discovered great "clouds" do not shine by their own light, but they appear to derive the required energy of their fluorescence from the general field of stellar radiation in the Milky Way star clouds. They differ from brighter nebulosities in that they are not concentrated toward individual stars.

Drs. Struve and Elvey consider it probable that many other portions of the Milky Way are covered by similar gaseous "clouds" but an investigation of a region in Canis Major shows practically no trace of nebular emission. The emission decreases very rapidly away from the Milky Way and at galactic latitudes of 10 or 20 degrees no emission is found.

Stars Seen Circling

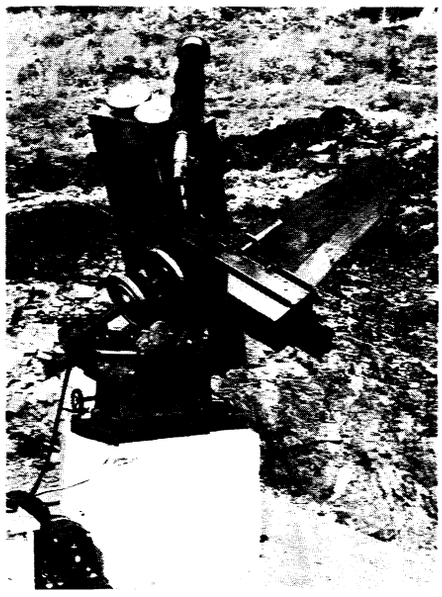
A new theory of a circular motion of stars "streaming" at high speeds in our galaxy was presented by Dr. S. Chandrasekhar, of the Yerkes Observatory, one of the eminent East Indian scientists working in this country.

Dr. Chandrasekhar's theory visualizes our nearby stars, among them the sun, swinging nearly circular orbits about the center of the galaxy.

If the nearby stars are taken as a group, the individual stars seem to be moving at random, with equal numbers of stars moving in opposite directions. But there is a maximum mean speed of the order of 15 kilometers per second (9 miles per second) in one direction. As a whole, however, this group has a nearly circular motion about the distant galactic center, a velocity of about 300 kilometers per second (185 miles per second).

The theory explains the dispersion of velocities with respect to the center of the local star group as due to the deviations of the actual orbits from a true circular orbit.

Science News Letter, September 24, 1938



MAKES DISCOVERY

This 150-foot nebular spectrograph of the McDonald Observatory was instrumental in the finding of unknown glowing masses of gas in the Milky Way.

PHYSICS

New Cosmic Ray Particle— "Baryton" or "Yukon?"

THE physicists have nearly as much trouble naming a new fundamental particle as a family of fond parents, grandparents and in-laws deciding what to call a new baby.

Now it is the heavy electron, the particle that lives only about a millionth of a second after being born of the cosmic rays, that is being christened enthusiastically.

Americans are calling the heavy electron "baryton," the first part of the word being Greek for "heavy." But Europeans, with Prof. Niels Bohr, of Copenhagen, as chief protagonist, are using "yukon" in honor of the Japanese physicist, Yukawa, who postulated the existence of the particle before Drs. C. D. Anderson and Seth Neddermeyer, of Pasadena, discovered it in 1937.

In discussion at the recent Cambridge meeting of the British Association, one of the Americans present observed that yukon was a rather cold name for a particle so hotly discussed and that Alaskans might protest.

The heavy electrons seem to make up the major portion of the penetrating particles resulting from the cosmic radiation. Scientists are flying high into the atmosphere and setting up apparatus

deep in tunnels in order to study them.

With some 240 times the mass of the ordinary electron, basic unit of electricity, the heavy electron is lighter than the proton, the nucleus of the hydrogen atom. It may very well be triplets, for it would be logical for it to be found with negative and positive charges as well as no charge at all.

It is a very unstable creature, existing theoretically for a mere millionth of a second when at rest. Strangely enough, it lives longer when it goes fast, owing to the relativistic change in time. One of them by great good luck was photographed at Pasadena coming to rest. Heavy electrons are supposed to disintegrate into electrons and neutrinos. And neutrinos are particles postulated but not yet discovered.

Science News Letter, September 24, 1938

MEDICINE

Future Babies to Arrive "At Home" Is Prophecy

Doctor and Nurse Will Hurry to Scene in Specially Equipped Autos; Specialists by Plane If Needed

TOMORROW'S babies will not necessarily be born in a hospital.

It will again be socially and medically acceptable to be born in the home of one's parents or in a village nursing home for obstetrics. In fact, such a birthplace will be safer and saner than the hospital for all who live outside of cities.

Dr. A. J. Skeel, director of obstetrics, St. Luke's Hospital, Cleveland, sees the maternity care of the future divided as follows:

1. In large cities all babies will be born in hospitals—special maternity hospitals or general hospitals that have small maternity units where mothers may be isolated from other mothers and babies from other babies. The big nurseries and maternity services of today will be taboo.

2. In the smaller community the babies of the future will be born in small nursing homes for obstetrics, no patients except maternity patients being accepted. When complications arise, a specialist will be summoned from the nearest large city. He will arrive by airplane to take charge of the delivery.

3. In the more sparsely populated areas, babies will be born at the parents' home.

Instead of taking the mother to the hospital, the hospital will come to the home if the family doctor thinks there is trouble ahead.

The family physician will send an SOS to a nearby medical center. Thereupon an obstetrician, nurses and all equipment necessary for operative work will speed to the home in an especially built automobile that can travel all sorts of roads in all kinds of weather. There will be no charge to the patient. These medical centers, subsidized by the state or by some foundation, will serve persons living within a 75-mile radius.

Dr. Skeel outlines this threefold plan for future obstetrics in the 25th anniversary issue of *The Modern Hospital*, which reviews hospital achievements of the past quarter of a century and looks ahead to the next 25 years.

In criticism of present hospital care for maternity cases, Dr. Skeel finds the general hospital too often locks the barn door after the horse is stolen in the case of infections among the newborn. Larger nurseries and larger maternity housing units have been the order of the day. These may easily mean epidemics of sepsis and of infantile diarrhea, he says.

"Future building of maternity hospitals, either for specialized obstetrics or the obstetrical division of a general hospital, should be planned for small unit service only.

"With isolation to protect from external contamination and with the small unit plan to limit septic contacts by a rare case, arising sporadically, the hospital can provide patients greater safety than was possible before, either in the home or in the hospital," Dr. Skeel concludes.

Science News Letter, September 24, 1938

One person in every 14 in this country last year spent some time in a hospital.

Oklahoma City has remodeled 800 of its street corners to make it easier for automobiles to turn right.

MEDICINE

Sulfanilamide Seen As Scarlet Fever Preventive

SULFANILAMIDE, the drug discovery of the decade, has its place in preventing as well as in curing scarlet fever.

Take the case of the eleven English choir boys, one of whom contracted scarlet fever while in Chicago. He was taken to the municipal contagious disease hospital and then there were 10.

The 10 were given 20 cc. each of pooled convalescent scarlet fever serum. On the eighth day one of the group took scarlet fever; then there were nine.

Mild forms of scarlet fever and streptococcic sore throat seized four others and then there were five.

The final five remained well, the same five that had been given sufanilamide during the course of their isolation. The other six (who did not receive sulfanilamide) recovered after varying periods of convalescence.

The story of the 11 little choir boys is used by Drs. Wallace Sako, P. F. Dwan and E. S. Platou, of Minneapolis, (*Journal American Medical Association*, Sept. 10) in an article on sulfanilamide and serum in the treatment or prophylaxis of scarlet fever.

These doctors report:

1. Among 100 cases of scarlet fever treated with large doses of sulfanilamide, complications developed in eight. Among 100 similar cases in which the drug was not given, complications occurred in 41.

2. Scarlet fever is strikingly modified by early massive doses of anti-toxin contained either in human convalescent serum or commercial horse serum.

3. Human convalescent serum, although it has a lower antitoxic titer per cubic centimeter, has a distinct advantage over commercial antitoxin with respect to safety for intravenous use.

4. Pooled human convalescent serum (20 cc.) failed to prevent streptococcic invasion of scarlet fever in five of 10 boys who were intimately exposed to it, whereas five who received additional therapy (sulfanilamide) did not contract the disease.

5. Commercial antitoxin in their experience has failed to protect several persons against the streptococci invasion of scarlet fever.

6. Early massive intravenous serum therapy combined with continued large doses of sulfanilamide seems to be the most effective treatment for scarlet fever.

Science News Letter, September 24, 1938