MEDICINE

Sickle Cell Anemia Theory

➤ THE reason why some individuals develop the severe, disabling, chronic form of anemia known as sickle cell anemia is reported by Dr. James V. Neel, of the heredity clinic, laboratory of vertebrate biology, at the University of Michigan.

"If a drop of blood is collected from each member of a randomly assembled series of American Negroes," he writes to the scientific journal, SCIENCE (July 15), "and sealed under a cover slip with vaseline, to be observed at intervals up to 72 hours, in the case of about 8% of the individuals composing the series a high proportion of the erythrocytes (red blood cells) will be observed to assume various bizarre oat, sickle, or holly leaf shapes."

The majority of those who have this peculiarity of the blood cells do not have any disease at all, but a certain proportion have sickle cell anemia.

The reason why only some of those whose blood "sickles" suffer from sickle cell anemia is explained by a theory proposed by Dr. Neel. If a child has only one parent who sickles, then the child's blood may sickle, but he will not have sickle cell anemia. If, however, the child inherits the sickling trend from both parents, he will not only sickle, but will have sickle cell anemia.

To test this theory, Dr. Neel started to test the blood of the parents of patients with sickle cell anemia. So far he has tested parents for 29 patients. In 13 cases, both parents were tested, in 16 only one. Every parent so far tested has shown the sickling.

These findings suggest a way of wiping out the dread sickle cell anemia. If persons whose blood sickles should avoid marriage with one another, the disease, Dr. Neel says, would tend to disappear, with only a very rare case as a result of mutation in a normal individual married to a person with one or both parents who sickle.

Science News Letter, July 30, 1949

MEDICINE

Pain Has Work Origin

➤ IF YOU think your work is giving you a pain in the neck and arms, you may be quite right and not at all neurotic or rheumatic.

Work pressure, faulty working posture and nervous tension may cause occupational disorders with symptoms that can be confused with rheumatism and neurosis, Drs. Henrik Seyffarth and Kirsten Moinichen of Oslo, Norway, declared at the International Congress on Rheumatic Diseases in New York.

The diagnosis of neurosis is sometimes made, they explained, because the patient's pains vary with his state of mind. The physical condition causing muscle, joint and tendon pain may not show up in a perfunctory examination. And neurosis may be a factor. But "even then," the Norwegian doctors said, "the organic changes are due to overstrain and wear and tear of the skeletal muscles."

Pain in the neck and arms, known to doctors under the medical term, cervicobrachialgia, affected 63% of 222 women clerks of an Oslo insurance firm studied by the Norwegian doctors. Practically all these cases were occupational disorders, the doctors found.

Clear symptoms of occupation myositis, or muscle inflammation, characterized by fatigue pains during work, were found in 51.4% of the women. "This soreness is generally found in the muscles used in static work, particularly in those whose main duty is to maintain an unvaried position while working," Dr. Seyffarth said.

For treatment of these conditions, he recommended heat, massage, X-ray, and, sometimes, novocaine injections. For lasting results, however, rest and relaxing gymnastics, with proper costabdominal respiration and instructions in the correct way of using the muscles in work, were suggested.

Dr. Seyffarth said that prophylaxis should include inspection and correction of the employee's working site and manner of working, plus 10 minutes daily light exercise during office hours, preferably under the direction of a trained physiotherapist. In many offices where these forms of therapy and prophylaxis have been used, he said, "lost working time from cervicobrachialgia has been reduced from 25% to 2%."

Science News Letter, July 30, 1949

ENGINEERING

Clay Under Mexico City Hampers Construction

➤ A SPONGY clay that underlies Mexico City creates a special problem in heavy building construction, the American Society of Civil Engineers was told recently by Ing. Pedro Albin, Jr., engineer of La Latina Americana. The whole plateau on which the city is built is gradually settling, he said, but heavy structures may settle at a faster rate.

He cited as an example one structure built on piles to avoid settlement which appears to grow in height as the level of the surrounding street falls. He cited, also, the case of a concrete building which has settled in a five-year period so that the ground floor is now a foot below street level. For the past 30 years, he stated, long wooden piles, some 112 feet in length, have been driven under buildings to secure support from a deeper and stronger stratum.

To avoid settlement of a building now under construction, it is proposed to mount the ground-floor slab on screws so that it can be lowered as the surrounding streets settle. For the same building, a long type of concrete pile is being introduced from the United States. It has a precast concrete "button" on the end, which makes it adapted to foundation conditions similar to those encountered in Mexico City.

Science News Letter, July 30, 1949

GENERAL SCIENCE

Touch Museum Exhibits Are for the Sightless

➤ A TOUCH museum exhibition for the blind in London now has 60 science displays for sightless visitors.

The exhibit, believed to be the first of its kind in the world, is located at The Science Museum of South Kensington. Only the blind or persons accompanying a blind person are permitted to attend the exhibit.

Displays ranging from mathematical principles to modern transport are placed on tables about waist-high so that they can be conveniently touched. Each display has a label in braille and a longer description which can be read to blind visitors by their escorts.

Science News Letter, July 30, 1949

ENGINEERING-AERONAUTICS

Helicopter Propellers To Be Tested on Giant Motor

➤ A GIANT electric motor will soon be in use at the Wright-Patterson Air Force Base, Dayton, O., in a program for the development of propellers for bigger and better helicopters. It was built for the Air Force by Westinghouse Electric Corporation, weighs 48 tons and is rated at 4,000 horsepower.

The motor is to be installed on a steel tower 30 feet from the ground where it will be able to spin high over the disturbances caused by ground-level air currents. It is not intended for airborne use, but is merely to provide test facilities for the necessary propeller experiments.

If actually used in a helicopter, it could lift craft weighing 50,000 pounds. This is about five times the weight of the largest helicopters now in use. Present aircraft of this type use motors ranging from 65 to 550 horsepower, with propellers up to 48 feet in diameter.

Science News Letter, July 30, 1949