

like in a building can throw the delicate machine off. So the instrument Dr. Smith works with at George Washington University Hospital, Washington, is set on a concrete block. The patient lies on a wooden table top placed on the concrete block. It is rather hard, but the test does not take long.

The patient's feet rest on two blocks and a wooden board attached to a bar magnet lies across his shins.

If a rigid spike could be put into the shin bone, the measurement of the heart's ejection force and power could be measured without interference from the movement of the instrument. Since this was obviously not practical, Dr. Smith and associates designed a bar magnet of exactly the right weight which picks up the motion of the body and sends an amplification of this to the graph record.

Dr. Smith believes that with this type of instrument, a reliable indication of heart valve damage can be obtained, such as in aortic insufficiency when the aortic valve leaks and puts a strain on the left side of the heart. Obstructions of the aorta (main artery leaving the heart) will give charac-

teristic patterns only in the displacement curves.

In angina pectoris, the low forces of ejection can be seen much more clearly on the acceleration curves when the displacement curves look normal.

The instrument is now being used to study patients with heart valve disease called "mitral stenosis." It may be helpful in determining the severity of the valve damage as well as to show improvement in blood flow after operation on the valve.

The ballistocardiograph may help prevent heart attacks by giving more exact information about heart function. When doctors find evidences of faulty conditions, it may be possible to change the heart pumping mechanisms so that heart attacks will be less likely to occur.

Among the first 50 pilots between 40 and 50 years of age Dr. Smith tested, all of whom were normal by regular CAA tests, eight showed an abnormal heart condition on his test.

Of these eight pilots, three have developed definite heart trouble, with one death within two years.

Science News Letter, July 9, 1955

AGRICULTURE

World Horse Shortage

➤ A SHORTAGE of work horses is affecting farm production in Russia.

A world survey has shown that having too few draft horses is a factor holding down agricultural production in Russia, India, China, Vietnam and the Philippines.

The total number of horses in the world continues to decline, the U. S. Foreign Agricultural Service reported in *Foreign Crops and Markets* (May 23).

Estimating the current population at 74,500,000, the agriculturalists pointed out that this is a one percent drop between 1953 and 1954, and a 22% decline since prewar days. The continuous decline reflects the increasing use of farm machinery.

Geographic areas showed contrasting trends. The number of horses has noticeably decreased in North America, Western Europe and Oceania. On the other hand, there have been increases in Russia and Eastern Europe.

Continued use of horses for work and transportation can be expected in Asia and some parts of Africa, Central and South America, the report said, but "it seems probable that animal draft power will give way to the increased use of tractors, automobiles and trucks in Eastern Europe, the U.S.S.R. and many areas of Africa and South America in the years ahead."

The latest estimates, as compiled by the Service, put the 1955 U. S. horse population at about 3,106,000. In 1953, Russia was reported to have had 15,300,000; Brazil, more than 7,000,000, and China, over 5,600,000.

The survey also tallied the number of mules and water buffaloes in the world.

The world total for mules and asses is about 50,000,000. It is estimated that the U. S. mule population is down 69% since before World War II, now numbering 1,400,000.

Water buffaloes, used for both draft purposes and as milk producers, are estimated to number approximately 78,000,000.

Science News Letter, July 9, 1955

MEDICINE

One in Seven Older Men Goes to Hospital a Year

➤ ONE OF every seven men aged 60 or over goes to the hospital in the course of a year, statisticians of the Metropolitan Life Insurance Company in New York reported.

The findings are based on the company's personnel protected by the company's group insurance program. It included those actively at work, the permanently disabled and the retired, but not those in Pacific coast states and Canada.

The men 60 years and older went to the hospital at a rate about twice that of men under 45.

Leading causes of hospitalization in the older group were, in order of numerical importance, diseases of the heart, diseases of the digestive system, operation for removal of the prostate gland and hernia operations.

Science News Letter, July 9, 1955

The birch leaf-mining sawfly has been a major pest of gray birch, white birch and paper birch since its introduction from Europe more than 30 years ago.

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