

longed physical stress as evidenced by athletic prowess is found most commonly among the over-weights. An exception to this is seen in long-distance athletes among whom underweight is commoner than overweight.

"The greater the degree of under-

weight on entry, the greater the likelihood of invaliding from the Service on medical grounds.

"It is uncommon for overweight individuals to become underweight and vice-versa."

Science News Letter, July 28, 1934



MEDICINE

License Granted To Make New Arthritis Vaccine

A NEW kind of vaccine for the treatment of the kind of rheumatism which physicians call "chronic infectious arthritis" has been developed by Drs. Bernard Langdon Wyatt and Robert Alan Hicks of Tucson, Ariz., in the course of more than two years' investigations.

The vaccine is of a special type and is made from microorganisms belonging to the streptococci group. It is given by injection into the veins in selected cases of chronic infectious arthritis.

While great benefits have been reported by a considerable number of physicians throughout the country, Drs. Wyatt and Hicks state that it is not to be regarded as a cure-all and that patients should be selected for this treatment in the manner described by them.

The Wyatt Clinic Research Laboratories have been licensed by the United States Government to manufacture the vaccine. This does not mean that the federal government guarantees the safety or effectiveness of the vaccine. It does mean, however, that so far as the government can control the conditions surrounding its manufacture and distribution, the vaccine is safe and will produce the results claimed for it in treating the disease.

Must Be Licensed

Biological products of this type, vaccines and serums for prevention or treatment of disease, may be sold in interstate commerce only when licensed by the Secretary of the Treasury. The licenses are issued on the recommendation of the National Institute of Health of the U. S. Public Health Service.

Among the regulations which must be met before a license is issued are the following: The product must be manufactured in suitable physical surroundings, that is in a room by itself and

separate from rooms or laboratories where diagnostic tests are being made; the manufacturing laboratory must be in charge of a competent professional staff; and the product must be safe and effective, so far as can be told.

Science News Letter, July 28, 1934

MEDICINE

Spectroscope Used To Detect Lead in Body

L EAD may be detected in the human body in a tenth the usual time for such a test by means of the spectroscope, it appears from reports of Prof. J. Stuart Foster of McGill University, Montreal, and Prof. Jacob Cholak of the University of Cincinnati at the Second International Spectroscopy Conference held at Massachusetts Institute of Technology.

While qualitative determination has been possible for some time, exact quantitative measurement has been exceptional without the use of the spectroscope. Both scientists also pointed out that chemical analysis heretofore used requires anywhere from 10 to 14 days while the spectroscopic analysis is possible in a period varying from 24 to 48 hours. This method also requires less tissue for the test.

Prof. Foster explained that the tests are made by a comparison of the intensity of the lead spectra with that of magnesium in the same sample being tested, in this case, an amount of spinal fluid. Using known lead concentrations to add to the spinal fluid and establishing a relation between the above ratio and the lead concentration, it is possible to detect one hundred millionth gram of lead per cubic centimeter.

Prof. Foster hopes to apply this method to the study of lead as a possible cause of multiple sclerosis.

Science News Letter, July 28, 1934



Of Dragons

W E LIKE to identify creatures from the scary fairy-tales of our childhood, or of the race's childhood, with actual living monsters, even though we meet them when we are grown-ups!

Thus with dragons. When the zoological gardens in Washington and New York acquired some new giant lizards from Komodo recently, nothing would do but they must be dubbed "dragon-lizards." These fearsome firebreathing monsters that rumbled and puffed through the folk-myths of the whole world from the legend of St. George to the tales of ancient China, were more real in our still-childlike imaginations than the almost unknown flesh-and-blood beasts crawling in the jungles of an almost unknown East Indian island. We had always had a shadow of a dragon lying across our path, and we were delighted to find a creature to fit it, even though it was really hardly big enough.

Unimportant, that the real dragons are very rare. So were the dragons of mythical antiquity. Not every cave or forest could boast one, nor every maiden be menaced by one, nor every stout young man slay one. You had to live very far away, and be a princess, and your rescuer had to be either the son of a king or the son of a god.

And in some parts of the world there were good confirmations of the one-time existence of dragons. In China especially could plenty of dragon's bones be found—fossils of the long-gone dinosaurs, that washed out of the weathering soft rocks as rivers ate away at their banks. The Chinese were scientists enough to recognize them as bones; poets enough to clothe those bones with terrifically fearsome flesh. Some bird and mammal entered into

the composition of the Chinese dragon, but the great bulk of him—and it was a really great bulk—remained (quite properly) reptilian.

It is even reported that tons of stony dinosaur fossils have been swallowed by centuries of generations of ailing Chinese, ground up into powder and mixed with wine, to restore strength and youth and make the world seem all right again. Well—Chinese wine is said to be potent!

Probably if the naive Chinese medical men could have had access to later Occidental scientific investigations, they would not have been so eager to prescribe dragons' bones so indiscriminately. For by no means all the dinosaurs were fierce and aggressive, if modern judgments are at all correct. Many of them, and practically all of the biggest, like the giant Brontosaurus for example, were probably as placid as cows, and much more stupid. Their teeth prove that they were vegetarians, and their skull-cavities allow space for a brain hardly larger than a teacup—and that to run an animal bigger than a house!

No, the Celestial physicians, if they were prescribing today, would without question insist on authentic Tyrannosaurus bones for strength and fierceness, or Thalattosaurus bones for skill in sea-faring, or the bones of the flying Pterodactyl for lightness and lifting up of the heart.

Science News Letter, July 28, 1934

Rare and famous dinosaur skeletons in the Royal Museum of Natural History in Brussels are beginning to deteriorate from the moisture in the air, and will be lost to science unless removed to glass enclosures.

MEDICINE

Death Predicted by Means of Spectroscopic Test of Blood

Patients In Extremis Are Subject to Profound Chemical Changes Affecting Color Elements in Blood

FORECASTING death by means of spectroscopic investigation of the blood of ailing patients was reported at the second annual International Spectroscopy Conference in session at the Massachusetts Institute of Technology.

In several cases physicians attending the patients were of the opinion that death was imminent, it is reported, and were amazed to find the spectroscopic prediction verified within as small a time as 24 hours.

The report was made by P. and L. Lecompte de Nouy, two French scientists associated with the Pasteur Institute, who did not attend, but communicated their report to Prof. George R. Harrison of the Massachusetts Institute of Technology, chairman of the conference, who delivered it in their absence.

Analyzing over 8,000 samples of the blood of men, horses, and sheep, these scientists have found that curves plotted by a spectroscopic examination of the serum and white plasma of the blood show remarkable constancy, "so great that they can be really superimposed on each other."

When departures from this general curve are noted, it is stated, it can be safely interpreted as an indication of pathological disturbances. Such altera-

tions are rare and seem to correspond to fatal cases.

"Alterations in the curves," reads the report, "must correspond to very deep chemical modifications affecting the chromophoric (color) elements which belong to very stable chemical groups."

"We predicted a man's death, which followed in 24 hours. He was partly paralyzed, owing to a malignant tumor of the spine, with metastases in the lower jaw, and urinary infection. He was expected to live, however, for many months."

Science News Letter, July 28, 1934

PHYSICS

Explosion Sound Bears News of Stratosphere

EXPLORING the stratosphere by means of explosions set off on the earth's surface is one of science's new methods of gaining information about this mysterious region without leaving the ground.

The experiments are described by Dr. Kurt Wolcken of the University of Goettingen in the Berlin scientific journal *Forschungen und Fortschritte*.

It has often been observed, Dr. Wolcken writes, that a great explosion can only be heard within a radius of 80 to 100 miles. Beyond this limit there is a ring of silence, and then another zone, where the sound can again be heard. There is a skip zone for the sound just as there is for short radio waves.

Two theories have been proposed to explain the phenomenon. One is that the effect is due to the increase in wind velocity which occurs with the height. Sound is more often heard to the east in winter and to the west in summer, and other correlations with wind velocity and direction have been noted.

Another theory is that the effect is due to a rise in temperature in the upper stratosphere but there is no experimental evidence in its support. Sounding balloons have seldom risen above 20 miles (the record is 22 miles). They

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