as much work, yet must gather straw, and they could hardly work fast without it.

Egyptian bricks were more varied in size than modern building brick. Prof. Petrie cites buildings in Egypt made with huge bricks, 23.6 inches by 12.1. The smallest brick was only seven or eight inches long.

When the Israelites were in Egyptian bondage, the building style favored large bricks, about 15 inches or longer. Prof. Petrie says it would require several men to move one of the largest bricks without breaking the edges, and two men to do the brick laying, all of which adds to our mental picture of Israelites in Egypt. *Science News Letter, July 1, 1939*

PHYSIOLOGY

"Panting Hormone" May Aid In Drowning Accidents

A "PANTING" hormone effect that promotes rapid breathing has been discovered by Drs. Theodore Koppanyi and C. R. Linegar of the Georgetown University School of Medicine. Possible human clinical use of this neurohormone is foreseen in cases that need respiratory stimulation, such as gas poisoning or drowning accidents.

Violent panting is produced within 15 seconds after acetylcholine, another hormone now made synthetically, is injected. The neurohormone that produces the quick breathing is poured out into the blood stream when the ends of the nerves are stimulated by this substance.

The Georgetown University scientists believe that the hormone produced is the same or very similar to sympathin, the hormone discovered by Dr. Walter B. Cannon of Harvard. Sympathin stimulates the sympathetic nervous system, raising blood pressure, speeding the heart beat, relaxing the muscles around the lower digestive tract and dilating the pupils of the eyes. The newly found respiratory effect is also a function of the sympathetic nervous system.

After announcing their research in *Science,* Drs. Koppanyi and Linegar plan to work on the extraction of the hormone from the blood in order that it may be used experimentally in further tests. *Science News Letter, July 1, 1939*

Rich deposits of tantalum and columbium are reported in the Belgian Congo.

Floods in the United States ordinarily cost about 100 million dollars in damage a year; but the Mississippi River flood of 1927 cost three times that much.

PSYCHOLOGY—SOCIOLOGY

Reform of Prisoners Cannot Take Place Inside Prisons

THAT we should abandon the attempts to reform men in reformatories, but expend the same energy in rehabilitating only those criminals who show some promise of becoming worthwhile citizens, is the proposal of two U. S. Public Health Service officers familiar with prison personalities.

Inside the prison walls it is practically impossible for the prisoner to reform, declare these experts in a new book *Problems in Prison Psychiatry,* by Drs. J. G. Wilson and M. J. Pescor.

Any change in character must come about by the prisoner's own volition and cannot be produced through force. But because discipline in prisons must be maintained, such cooperation between the custodial force and prisoners is practically impossible.

Fraternizing between guards and prisoners is strictly forbidden, and this rule not only prevents cooperation but it promotes enmity, deceit, and bitterness.

Other influences acting to oppose reformation in prison are the rigid regimentation, the written rules that govern every movement of the prisoner for every one of the twenty-four hours, leaving him no chance for initiative, and the absence of women. And, somewhat paradoxically, we must also add the type of coddling which relieves the prisoner of all responsibility and feeds, clothes and cares for his routine as though he were an infant.

These conditions interfere seriously, these experts declare, with a program of rehabilitation. The prison now serves as a means of segregating and punishing dangerous prisoners—for the revenge and protection of the public.

About one-fourth, they estimate, of the men now in prison should remain there indefinitely. They should be made as happy and comfortable as possible under conditions which demand safe custody, but no efforts should be wasted on their reformation.

The other three-fourths can be safely paroled. With them could go at least three-fourths of the prison personnel engaged in their rehabilitation.

Outside the prison walls these groups could work together for rehabilitation with profit to both the prisoner and society.

Science News Letter, July 1, 1939

PSYCHOLOGY

Jazz Enters the Laboratory For Psychological Study

SYNCOPATION is not the new thing that jitterbugs probably believe, and yet scientific understanding of its appeal for dancing humans has never yet been attained.

Know where syncopation got its start? Not in Harlem or Tin Pan Alley or the African jungle; syncopation is a device of the classic Greek poets.

The rhythmic device of superimposing a *one*-two-three rhythm upon a *one*-two-three-four fundamental so that the accented beat of the three-part rhythm fell on the unaccented beats of the four-part rhythm is characteristic of American jazz but did not originate there.

Such good classical compositions as Beethoven's *Symphony in B-flat* and Chopin's *Valse in A-flat, Op.* 42 use exactly this same device. The former makes a passage in common time sound as if it were in triple. The Chopin piece achieves a syncopic effect by placing a melody in two-part time over an accompaniment in three-part time.

Rhythm is enjoyed only through movement, psychologists seem mostly to agree. The movement may be violent as it is with the jitterbug or the members of a modern swing band. Or it may take place only in the imagination or in tiny movements of an involuntary and unrecognized sort.

Syncopation seems to be enjoyed because the variety in accent is superimposed upon a regularity of rhythm that makes jazz popular for dancing.

Subjecting syncopation to laboratory

tests, Dr. H. E. Weaver, of Oberlin College, had ten well-trained musicians tap out the rhythm of both normal and syncopated measures, tapping with both fingers and feet. The fingers and toes of the musicians were lightly attached to a recording device which put upon paper every movement.

Foot beats, he reports in the *Journal of General Psychology,* carry forward the steady underlying regular rhythm. The finger beats vary much more widely and build up in intensity on each beat until the syncopic accent is reached. A syncopic accent increases the intensity of the adjacent time-keeping beat.

"The accentuated rhythm of syncopated music would seem to depend upon this fact," Dr. Weaver concludes.

Science News Letter, July 1, 1939

ENTOMOLOGY—AERONAUTICS

Hundred Flying Immigrants Return on Atlantic Clipper

And It Is Appropriate That They Should Fly Because They Are Flies That Will Battle Asparagus Beetle

By LEONARD H. ENGEL

Science Service Aviation Writer

NEARLY a hundred immigrants were stowaways on the Atlantic Clipper's return flight to America and I helped them. As a matter of fact, they have the consent and approval of the U. S. Government, because they promise to be very good citizens, fighting one of the dangers within our own country.

I had them cooped up in a little wooden cage, not much bigger than a cigar box. They had enough to eat and drink for the whole transatlantic flight and the steward didn't have to bother with them. It is quite appropriate that they flew to America for they are flies.

To the Bureau of Entomology and Plant Quarantine of the U. S. Department of Agriculture, I brought back a consignment of parasites that will fight the asparagus beetle. These creatures look like ordinary house flies and they are called scientifically Meigenia floralis. I received them from Dr. H. L. Parker, in charge of the U. S. Entomological Station at St. Cloud near Paris, one of Uncle Sam's two permanent parasite stations in foreign countries. The other is near Yokohama, Japan.

American scientists by discovering and importing enemies of insect pests into the United States are fighting for the farmer in his work of raising our food. Parasites are studied in foreign lands and when they give promise of usefulness are carried to America and set upon European corn borers, Hessian flies, oriental fruit moth, gypsy moth, lima bean pod borers and other pests.

Many of America's most bothersome insect pests are unfortunate imports from Europe and the asparagus beetle to be fought by our flies came from Europe.

Thus the Atlantic Clipper is a troop ship in man's fight against the insects. This is the first time that insects have been ferried across the Atlantic by air for Uncle Sam's entomologists, although they have used Pan American Airways airplanes before to bring needed parasites overseas from other continents.

Science News Letter, July 1, 1939

PHYSICS

Scientific "Torture" Tests Turbine Blades

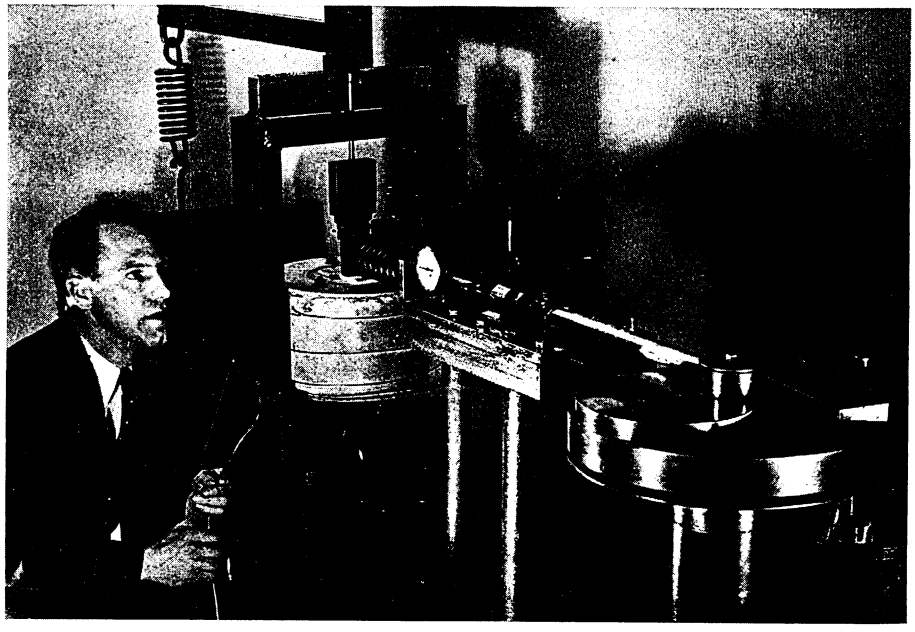
RAINING 2,600-pound blows at the rate of 600 a minute for 277 hours is the new machine which tests the blades of steam turbines, developed at the research laboratories of the Westinghouse Electric and Manufacturing Co.

The six-inch samples during this pummelling are enclosed in a steam bath within an electric furnace at a temperature of 850 degrees Fahrenheit. This is sufficient to make steel glow a cherry red as the inner steel parts of a steam turbine actually do during service.

According to T. F. Hengstenberg, research engineer who designed the torture device, the centrifugal force on turbine blades—caused as they travel around the shaft at speeds in excess of 789 miles an hour—is duplicated by a force of 9,000 pounds which pulls upward on the test specimen.

A total of 10,000,000 individual impacts is given to each test sample. This more than equals the life experience a blade might receive in actual service. The primary object is to test the "roots" of the turbine blades where they are attached to the 18-ton turbine shaft that spins at 3,600 revolutions a minute.

Science News Letter, July 1, 1939



FOR "TORTURE" TESTS

T. F. Hengstenberg, Westinghouse Research Laboratories engineer operating the device he designed for testing turbine blades. It rains 2,600-pound blows at 600 a minute on the samples which are meantime being subjected to a temperature hot enough to make steel glow a cherry red.