

INVENTION

Patents of the Week

A fingerprinting method that stores prints on a plastic film has been patented. A secret radio communication system and a bleacher seat are other recent inventions.

➤ A FINGERPRINTING method designed for tracking down criminals or identifying victims of a nuclear attack has been patented.

Dr. William D. Stewart and Joseph A. Terek, research scientists at Atlantic Research Corporation, Alexandria, Va., received patent No. 2,986,831 for a fingerprinting process that forms a plastic "cast" of an imprint.

Designed originally for identifying mass casualties in time of an atomic war, the method is now extensively used for solving crimes by the Canadian Mounted Police and various police departments throughout the United States. The Federal Bureau of Investigation (FBI) is also reportedly interested.

A fine powder is first sprinkled on a fingerprint, followed by a spray of liquid plastic (polymer). The plastic film hardens in a few minutes, trapping a powdered imprint, and is then peeled off. The film does not smudge the fingerprint and can be stored as a permanent record, the patent claims. Dr. Stewart has already received more than 40 patents for various synthetic rubber compounds and plastics.

An ultra-secret radio communication system that discourages the enemy from intercepting radio messages during wartime was patented by Claudius H. M. Roberts, Washington, D. C., and Wilbur S. Hinman Jr., Falls Church, Va., who assigned rights of patent No. 2,987,614 to the U. S. Army. Speech is compressed and coded on tape into a series of pulses, lasting only a few thousandths of a second, and beamed over transmitters.

Spectators sitting in bleachers while watching basketball or other sports can sit more comfortably with a back rest invented by Robert S. Walworth, Berlin, Wis., who assigned rights of patent No.

2,987,111 to Consolidated Foundries and Mfg. Corp., Chicago, Ill. The back rest collapses easily when telescopic bleachers are pushed back into the wall for storage.

An "automatically controlled electric kettle" for boiling water won patent No. 2,987,607 for William P. Paulin of Barrie, Ontario, Canada, who assigned rights to Canadian General Electric Company, Limited, Toronto, Canada. The improved electric kettle has a pilot light that lights up when the boiling point is reached. A switch can adjust the timing of the thermostat to correspond to the boiling point of a particular region whether it is in the mountains or at sea level.

• Science News Letter, 79:389 June 24, 1961

PSYCHIATRY

How to Be a Nobelist

➤ WHAT IS REQUIRED to win a Nobel Prize was learned from three scientists of world-wide renown, who attended the third World Congress of Psychiatry, Montreal, Canada, to report on creativity in science.

The three Nobelists are Lord Adrian of Cambridge, England, Dr. Linus Pauling of California, and Dr. Albert Szent-Gyorgyi of Hungarian-born biochemist.

Being born in the right kind of family was emphasized by Dr. Szent-Gyorgyi, Hungarian-born biochemist.

"I am the fourth generation in a family of scientists, and I have grown up in a very intellectual atmosphere where only scientific or artistic achievement counts. As children, we knew nothing about money or politics, but knew something of what was going on in art and science all over the world."

BIOLOGY

Drying of Cells Allows Indefinite Storage Time

➤ A SIMPLE rapid method of drying cells for microscopic study was reported at the Syverton Memorial Symposium and 12th annual meeting of the Tissue Culture Association in Detroit, Mich. The new method permits indefinite storage of dried cells and eliminates chemical treatment that may disturb vital details of cell structure and function.

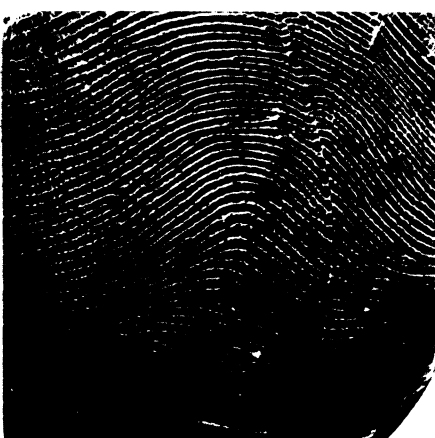
It was developed by scientists at the National Cancer Institute of the National Institutes of Health, Bethesda, Md. Henry C. Orr, Dr. Morris Belkin and Walter G. Hardy, all of NCI, and Dr. Ezio Merler, a former NCI scientist, now of the Harvard Medical School, Boston, reported the method.

Phosphorus pentoxide, put into jars with the cells to be treated, rapidly removes water from, and dries, the cells. Other methods require freezing and drying, or require application of chemical hardening agents.

• Science News Letter, 79:389 June 24, 1961



INKED FINGERPRINT



PLASTIC FILM PRINT

Dr. Szent-Gyorgyi also stressed the importance of a burning enthusiasm for work in the field of science.

"I find myself running every morning, at an early hour, very impatiently, to my laboratory," he said. "My work does not finish when I return from my workbench in the afternoon. I go on thinking about my problems all the time."

"Conscious thinking only acted as a primer for my brain, which seemed to have worked much better without my muddling, when I was asleep."

The importance of the unconscious in the birth of new ideas was also stressed by Dr. Pauling, Nobel Prize-winning chemist from the United States.

"From my own experience, I have come to the conclusion that one way for me to have a new idea is to set my unconscious to work on a problem."

"I doubt that the unconscious can be directed to work on a problem. But the problem can be suggested to it, and if it is interested in it, something may result."

Dr. Pauling told the Congress how he had trained his unconscious to help in the discovery of new ideas.

"I had developed," he said, "a habit of thinking about certain scientific problems as I lay in bed waiting to go to sleep. Sometimes I would think about the same problem for several nights in succession while I was reading or making calculations about the problem during the day. Then I would stop working on the problem and stop thinking about it in the period before going to sleep. Some weeks or months might go by, and then, suddenly an idea that represented a solution to the problem or the germ of a solution

to the problem would burst into my consciousness."

The part played by new instruments or new materials—the plastics, computing machines, infrared spectrometers and electron microscopes—in facilitating a whole series of developments in science was stressed by Lord Adrian, English neurologist.

PSYCHIATRY

Alcoholism in Germany

➤ ALCOHOLISM has become a serious problem in Germany, Dr. B. Lewin, psychiatrist of Dusseldorf, Germany, reported to the Third World Congress of Psychiatry in Montreal, Canada.

After the close of the war, and as the prosperity of Germany increased, the number of excessive drinkers also increased although addiction to drugs decreased, Dr. Lewin said. The World Health Organization estimated approximately 7,000,000 excessive drinkers of whom 300,000 must be called addicts.

The usual "abstinence cures" proved to be failures in most cases, the patients relapsing to their old vice as soon as released from the hospital.

Working from the assumption that the compulsive drinking was due to psychological causes, whether conscious or unconscious, psychotherapy was started. At first individual therapy was used, but as the number of cases mushroomed, group therapy was resorted to, Dr. Lewin reported.

The patients were enthusiastic about the new treatment. As it continued, the patients developed not only a mutual understanding of their problems, but a social conscience which was of great importance later in life with their families and in the community.

• Science News Letter, 79:390 June 24, 1961

Murderers' Brain Waves

➤ ADOLESCENT murderers have been found to have peculiar brain-wave patterns characterized by six- and 14-per-second spikes in the brain-wave tracing. This was reported to the Third World Congress of Psychiatry in Montreal, Canada, by Drs. Sherwyn M. Woods and Howard C. Stehle of Madison, Wis. Two young murderers they studied also displayed a peculiar lack of emotion, a compulsive and impulsive drive to commit the aggressive act and a lack of conscience in reference to it.

The juvenile murderers are not subject to convulsions or unconsciousness, and their symptoms do not resemble either grand mal or psychomotor epilepsy.

The peculiar "six and 14 syndrome" has also been found in a significant number of children and adolescents who have committed serious crimes such as fire-setting, aggressive sexual behavior, acts of violence and destruction, and murder.

• Science News Letter, 79:390 June 24, 1961

Attitude and Drug Value

➤ AN ANTI-DRUG attitude on the part of parents, or of the child himself, may hide

the beneficial effect of a drug on child behavior, Dr. Mauricio Knobel of Buenos Aires, Argentina, warned his colleagues at the Third World Congress of Psychiatry meeting in Montreal, Canada.

• Science News Letter, 79:389 June 24, 1961

The drug Ritalin is effective for treating overactivity in children, Dr. Knobel found from tests of it on 150 young overactive patients aged from seven to 15 years. The Ritalin, made by CIBA Pharmaceutical Products, Inc., was given twice a day for a period of eight months.

Although teachers' reports and the personal observation by Dr. Knobel showed that overactivity and aggressiveness diminished in all the children, reports of the parents in some cases would indicate that their children did not improve. Dr. Knobel traced these unfavorable reports to a prejudiced attitude on the part of the parents and in some cases to the child himself.

This attitude Dr. Knobel calls the "anti-drug effect." It is like, he said, a reverse of the "placebo effect." The placebo effect is the name given by medical researchers to the fact that sometimes patients will get better no matter what is done for them even if they are given only a "sugar pill" or capsule containing an inert powder without any medicinal properties. Such a "fake" pill without medicinal value is called by scientists a "placebo."

Whenever the physician notices such an anti-drug attitude, he should use psychotherapy first and the drug only afterwards, Dr. Knobel advised.

Despite the effectiveness of Ritalin for the overactive child, psycho-social therapy combined with the drug multiplies and definitely increases its effectiveness and improves results, Dr. Knobel said.

• Science News Letter, 79:390 June 24, 1961

Eye Shows Inner Tension

➤ THE WAY the pupil of the eye responds to light provides a simple, observable test for internal tension, restlessness and anxiety, Drs. Kosta Kurtesh and Josif Divich, psychiatrists of Belgrade, Yugoslavia, reported to the Third World Congress of Psychiatry in Montreal, Canada.

The reaction of the eye's pupil to light was observed in 3,210 cases of psychoneurotic outpatients and in 43 hospital schizophrenic patients.

The pupil reacted little, if at all, among the 3,210 psychoneurotics and among 29 of the 43 psychotic cases. There was no syphilis in either group, the physicians explained. (Syphilis is also characterized by an absence of pupillary reaction to light.)

With all psychoneurotics showing little or no reaction to light, preoccupation with their own personality was predominant, the psychiatrists reported. The condition was found to be temporary and disappeared when the internal tension was relieved.

• Science News Letter, 79:390 June 24, 1961

ASTRONOMY

Supernova Spotted In Distant Galaxy

➤ A SUPERNOVA or exploding star has been discovered in a distant star system.

The star system known as M-61 is a bright huge spiral like the Milky Way galaxy to which the sun belongs.

The star itself, which by exploding has become many million times its original brightness, is only of 13th magnitude when seen from earth and can only be observed with a telescope.

The galaxy to which the star belongs is located in the constellation Virgo, the virgin, seen due south in the sky soon after dark.

The supernova was discovered by Dr. M. L. Humason, astronomer at Mt. Wilson and Mt. Palomar Observatories, on June 3, Harvard College Observatory reported.

• Science News Letter, 79:390 June 24, 1961

GENERAL SCIENCE

10% of State Personnel Scientific or Technical

➤ ALMOST 88,000 scientists, engineers and technicians in all 50 states are on state government payrolls, a survey completed in 1960 shows. They comprise about 10% of the working force in the 3,000 state agencies covered.

The survey, first of its kind, was undertaken by the Bureau of Labor Statistics at the request of National Science Foundation.

The 12,500 state-employed scientists included 3,700 biologists, 3,500 agricultural specialists, 1,650 medical scientists, 1,300 psychologists, 1,200 chemists, and 600 geologists and geophysicists. Engineers totaled more than 28,000, with 45% licensed or registered as professionals. More than half of the 46,798 technicians were engineering or physical science aides. The remainder worked as surveyors, draftsmen and technicians in the life sciences.

A heavy majority of the scientists, engineers and technicians were employed in three broad categories—public works and highways, health and welfare, and agriculture and conservation.

Employment of scientists and engineers ranged from 71 in Alaska to 5,310 in California. California, New York, Massachusetts, Illinois and Texas each employed more than 1,500.

The National Science Foundation report, "Employment of Scientific and Technical Personnel in State Government Agencies," is available for 45 cents from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

• Science News Letter, 79:390 June 24, 1961