

SCIENCE NEWS

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A METHOD for detecting a strange disease, argyria, in its earliest stages, was reported to the American Medical Association, meeting in Milwaukee, by Dr. Irving S. Wright, of the New York Post Graduate Medical School of Columbia University.

Argyria is a condition in which the patient turns a greyish-blue color. In the final stages the color is very pronounced, and if the patient is exposed to sunlight, his skin turns a very dark mahogany brown. The condition is becoming more common all the time. There is no way of treating it. Argyria results from taking medicines containing silver salts for a long period of time. Such medicines are often given in the treatment of nose and throat ailments. Frequently patients who have used these medicines under a physician's directions will use them again on their own initiative when suffering a repetition of the nose and throat ailment.

Formerly it was thought that the blue discoloration, which makes its first appearance around the base of the nails, was due to stoppage of the blood flow through the tiny blood vessels, the capillaries. But Dr. Wright and his associates have recently developed a microscope for observing the capillaries and watching the blood flow through them. When they used this apparatus to examine the capillaries of the nail cuticle in cases of argyria, they found that there was no stoppage of the blood flow and no evidence of congestion. This led to discovery that continued administration of silver-containing medicines results in the precipitation of silver albuminate in the tissues, which produces the blue color.

Once the color is established, there is no satisfactory remedy for the condition. But if the first appearance of it around the nails is noted and the dosage of silver-containing medicines stopped, it is believed the condition will not go farther. While the condition does not impair the health, it is most disfiguring.

Dr. Wright used the capillary microscope to examine another group of patients. These are a class in whom several observers had found that the surface of the fingers was actually colder after smoking one or several cigarettes. Dr. Wright and associates observed that in a few of these patients they could detect with the new apparatus a slowing down and occasionally a stoppage for several seconds of the blood flow in the capillaries of the nail cuticle. This accounts for the drop in temperature, but the constituent in tobacco which produces this effect is not known at present.

This and other methods of examining the blood vessels and for determining surface temperature of the hands and feet were shown in an exhibit sponsored by the association and contributed to by the New York Post Graduate Medical School, the Mayo Clinic, Northwestern University, the University of Pennsylvania, the University of California and the Presbyterian Hospital of New York. These new methods have enabled physicians to make early diagnosis of a number of diseases of the

extremities formerly considered hopeless. As a result the conditions may be greatly relieved by surgical and medical treatment.

SKULL change is a new key to the past function of the gland which influences growth, sexual development and possible mentality. Studies showing this were reported by Dr. Hector Mortimer, of Boston, to the Association for the Study of Internal Secretions. It appeared from his report that the history of the functioning of an individual's pituitary gland throughout his life with all that tells of the individual's health and physical and mental development, can be read in changes in his skull that may be seen in x-ray photographs.

Four basic types of skull changes were found by Dr. Mortimer and Drs. George Levene and Allan Winter Rowe, of Boston, after a review of a collection of documented acromegalic crania in museums in America, England and Scotland. The first type is characterized by expansion of the face and sinuses, especially the frontal sinuses. This expansion changed, affecting all bones and mechanically producing the well-known deformities of acromegaly, including the large jaws. The second type is characterized by a small head, small face and very dense skull. This chiefly affects women who are usually fat, and is a sign of failure of the gland, not of over-activity as in the first type. The third type begins as a type one, with over-active gland; the gland subsequently fails and the bones become dense like old bones, even in young people of eighteen. Failure of the gland is, in other words, premature aging of the individual. The skull becoming dense, which means not that it is thick, but that it is so compact as to be almost like ivory, is an indication of failure of the gland. This is a feature of both groups two and three. In these groups there are ten times more women than men. The mechanism behind all this accounts for the fact that women age more quickly than men and are more liable to become stout. The fourth type of skull change is found in dwarfs and other persons whose pituitary gland has never been fully active. This type can be recognized by failure of the frontal and other sinuses to develop completely. In many of these persons the frontal sinuses never develop at all. This gland failure also means that the sexual development is much below par or even absent.

BONE development is now being used as a guide in treating certain children who are mentally retarded or emotionally unstable. Dr. E. Kost Shelton, of Santa Barbara, California, has found the stage of bone development, or bone age, a good index to the speed with which certain vital transformations are going on in the body. These transformations are the processes by which energy for the body's activities is obtained from the burning of food and oxygen. When these processes,

called metabolism, proceed at either too fast or too slow a rate, the health is seriously affected.

Dr. Shelton found that the bone age, which can be determined by x-ray examination, is correlated with the metabolic rate, and can be used as a guide in treatment of certain types of disordered metabolism. "Any metabolic disorder in childhood, when sufficiently severe to produce mental or emotional symptoms, will be reflected in bone development." He believes that the rate of bone development is determined by the metabolic speed and therefore is the best guide to the latter. Dr. Shelton described a number of patients suffering from retarded growth and defective mental development, in whom he also found very much retarded bone growth. Treatment with extract from the thyroid gland, which speeds up the rate of metabolism, improved markedly the condition of the patients. Additions of vitamins A and D and feeding an otherwise adequate diet had no effect on metabolic speed or the developmental age.

THE death rate from one type of pneumonia can be cut in half when serum is used in treatment during the first four days of the disease, according to a report presented by Drs. Gaylord Anderson and Roderick Heffron, of Boston. They gave details of a study made by the Massachusetts State Department of Health. Pneumonia takes a terrific toll at the economic prime of life. It is practically impossible to prevent pneumonia through such measures as quarantine or vaccination. In two of the types, however, it is possible to modify the course of the disease by injection of serum during the first few days. Poor economic status with unhealthful living conditions does not influence the occurrence of pneumonia or the mortality, evidence from another phase of the study showed. Seasons, however, play an important part, according to Dr. Wilson G. Smillie, of the Harvard University School of Public Health. All types of the disease were less prevalent in the summer and early fall than in winter and spring.

IF scarlet fever antitoxin is given within the first day or two after a person has become sick with scarlet fever, the disease is much less severe and complications are less likely to develop, according to Dr. Luke W. Hunt, of Chicago. His report was based on a study of more than 2,000 cases, in nearly 900 of which the antitoxin was given. If enough antitoxin was given early, the rash faded within twenty-four hours and the fever fell several degrees. An important discovery was that the subsiding of these symptoms made it possible to find the complications which are more to be feared than the disease itself.

INFECTION of the esophagus, the canal which connects the throat with the stomach, leads to thickening of the layers of tissue in the organ. As a result, the tube may become so narrow that food can pass only with difficulty, if at all. This condition was described by Dr. Harris P. Mosher, of Boston. He demonstrated a method of de-

termining where the thickening is and of stretching the tissues to widen the opening so that the patient may swallow comfortably. The infection may arise in the esophagus itself, or infection in other parts of the body may harm the canal. Dr. Mosher found some narrowing of the canal in persons who had pneumonia, ulcers of the stomach, infections of gallbladder, kidneys and other organs and in other conditions.

IF your shoulder has been gradually getting painful and stiff, for no apparent reason, it may be that you have torn the tendon which helps to support the shoulder joint. This tendon may be torn by a sudden jerk or by repeated strain without your knowing it at the time. Dr. E. B. Fowler, of Chicago, found 56 such ruptures in a study of 340 shoulders. Because there is little or no pain at the time of the tear, the injured shoulder is generally not seen by the physician until the patient is severely disabled. Immediate rest would probably result in complete repair of the tissue without other treatment. If rest does not relieve the condition, Dr. Fowler recommends an operation to determine whether the tendon actually is ruptured.

How surgeons can reattach the lining of the eye that has become separated by disease or accidental injury was told by Dr. Peter C. Kronfeld, of Chicago. In the condition known as "detached retina" the inner coat of the eye, the retina, which receives the optical image, may be partly or completely detached, with disturbance or loss of vision. The eye can be restored to nearly normal function so that the patient's vision is nearly normal, if the operation is done within a reasonably short time. The age of the patient also has a bearing on recovery, older patients being less fortunate in this respect. The condition affects color vision as well as vision in general. In the cases in which a color blindness for blue and green was noted, this defect was corrected.

A QUEER condition of sensitiveness to heat, cold or effort was demonstrated by Dr. W. W. Duke, of Kansas City, Missouri. He calls the condition physical allergy. The patients have many of the symptoms of sufferers from allergy due to pollens and food proteins. One patient became much depressed and was reduced to tears by warmth and exertion. With cold applications she got immediate relief from her depression and was seized with uncontrollable laughter. Another patient raised his arm three times and had convulsions. Relaxation and relief followed cold applications. Headache, asthma, partial blindness and skin eruptions were also caused by slight effort and relieved by cold applications. Temporary relief may be obtained by applying the opposite of what caused the attack. Permanent relief in many cases, amounting to cure, was obtained after six months of treatment.

HAY fever sufferers who have neglected to go for treatments until their pollen season has arrived and have

found themselves sneezing and sniffing can still obtain relief by treatments during the season. While physicians specializing in the treatment of these disorders have for some years recommended desensitizing treatment before the hay-fever season started, the association endorsed both methods of treatment. It finds that treatment during the season gives satisfactory results with the use of air-conditioned rooms in which temperature and ventilation are regulated, as in many theaters and some trains, and gives promise of being as useful in treating hay fever and asthma as the desensitization treatments. However, this new method is still in the investigative stage. Its chief disadvantage is the high cost of installation. Patients are not advised to install such rooms in their homes for the present, until further study has established their value.

A THREE-HOUR bath in tannic acid as a feature of the modern treatment of extensive burns was described by Dr. Donald B. Wells, of Hartford, Connecticut. The use of tannic acid relieves the pain sufficiently so that the burned areas can be thoroughly cleaned. In this way infection can be prevented. Infection alone was the cause of the exhausting illness, many of the complications and a majority of the deaths from burns in the old days. The person with extensive burns is placed in a large tub of tannic acid solution, according to Dr. Wells' plan of treatment. "He receives quantities of liquids to drink, in order to balance the loss of water. As soon as his pain is somewhat relieved, several attendants begin to work. For three hours they remove burned tissue as the solution loosens it and clean unburned areas with soap and water. By the time the patient is ready to be placed in bed a tan has formed over the burned portions. Then for seventy-two hours warm air is blown on him from an ordinary hair drier, while he is more or less constantly sprayed with tannic acid solution. After this the blower is used alone until the tissue has become perfectly firm, for only a little perspiration may break it and invite invasion by germs." The method is especially successful in burns from gasoline explosions, ignited clothing and extensive scalds. It can be used in any well-equipped hospital.

BURNED faces are more numerous now as a result of the machine age than they were in war time, according to Dr. Howard L. Updegraff, of Hollywood, California. Dr. Updegraff described the methods by which burned faces are restored and reconstructed. Surgery plays an important part, but chemistry and gland treatment are helpful and the final procedure is instruction in the use of make-up. For this purpose a professional make-up artist is employed in Dr. Updegraff's hospital. The instruction in the use of make-up has brought about a great improvement in the mental attitude of the patients, many of whom naturally feel that their fate is hopeless. Before the make-up artist starts instructions, however, the surgeon has done his work, which begins by study of old and new photographs of the face. Plaster models are also used. The actual operative work is usually de-

layed until the burns have healed. Eyelids are made from skin from another portion of the body. The membranous lining of the lid is supplied by taking a graft from the mucous membrane lining of the mouth. Eyebrows and even lashes are made from pieces of scalp. Noses, lips and ears are also reconstructed.

THREE means of controlling and preventing outbreaks of food poisoning were suggested by Dr. J. C. Geiger, San Francisco director of public health. First of the three measures is regulation and supervision of all persons who handle food. Second is thorough inspection of plants where food is prepared. Third, and most essential to real control of the situation, is education of the public. Food poisoning is as definitely preventable as smallpox or diphtheria. Yet, like those two diseases, it continues to occur because preventive measures are neglected. While outbreaks of food poisonings are so frequent as to constitute a challenge to students of public health and preventive medicine, Dr. Geiger believes that only a small proportion of the cases that actually occur are reported.

DR. PHILIP B. MATZ, of the U. S. Veterans' Administration, Washington, stated that gas warfare is the most humane of the methods of warfare. He pointed out that of 70,752 casualties as a result of gas in the American forces during the war, only 200 died immediately. The results of a careful investigation of the clinical records of nearly 500 men gassed by various gases were presented. Most serious after effects appeared in cases of gassing with phosgene. In this group a number of cases of nervous and mental ailments as well as lung diseases developed. The gas was not directly responsible for the mental ailments, but its severe effect on the individual man, particularly the swelling of the lungs which interfered with breathing, provided the exciting factor in persons with a constitutional defect of brain and nervous system.

ALTHOUGH the American Medical Association is opposed to state medicine, it was pointed out at one of its sessions that during the present economic situation we are actually having a modified form of state medicine. Fifteen per cent., almost one sixth, of the families in New York State, exclusive of New York City, are receiving medical care through state aid, according to a statement made by Dr. Thomas Parran, Jr., N. Y. State health officer. In addition to comprehensive health laws for the prevention of disease, the types of care now given by government agencies include treatment of mental disease through a system of hospitals; child guidance clinics and clinics for after-care; treatment of tuberculosis; care and treatment of crippled children; the construction and operation of public general hospitals; physical examination and corrective treatment of school children; treatment of venereal disease; state and local diagnostic laboratory service, and the state-wide program for furnishing general medical care as a necessity of life as part of emergency unemployment relief.