



“discover” it and, because some astronomical book may fail to describe it, he thinks that he has made a great contribution to knowledge.

The actual discovery of this movement of the solar system through space goes back about 150 years, to the English astronomer, Sir William Herschel. In studying the movements of the stars in the sky, he found that those in one direction were predominantly moving apart. Those in the opposite direction seemed all to be coming together. He realized that this was an effect of the earth's own movement. As we get nearer to some stars they apparently diverge. You can imagine a similar effect if you are motoring along a road that goes through a forest. If you pick out two trees ahead of you and watch them, they seem to draw apart until you are between them—then, as you leave them behind, they come together again. Since the center from which the stars diverge

is in the direction of Hercules, it shows that we are going that way. This is confirmed by other observations. The spectroscope, for example, tells whether the distance between us and a particular star is getting greater or less. Those toward Hercules show a predominance of approaching motions, those in the opposite direction tend to be moving away.

**Celestial Time Table for September**

Sept.	EWT	PHENOMENON
5	8:00 p.m.	Venus in line with sun.
7	8:33 a.m.	Moon in first quarter.
12	1:00 p.m.	Moon nearest; distance 223,900 miles.
13	11:40 p.m.	Full moon.
19	11:08 p.m.	Moon passes Mars.
21	12:47 a.m.	Moon passes Saturn.
	3:06 a.m.	Moon in last quarter.
23	6:12 p.m.	Sun crosses equator — autumn commences (Autumnal Equinox).
24	4:00 p.m.	Moon farthest; distance 251,800 miles.
25	10:23 a.m.	Moon passes Jupiter.
26	12:15 p.m.	Moon passes Venus.
29	7:29 a.m.	New moon.

Subtract one hour for CWT, two hours for MWT, and three for PWT.

Science News Letter, August 28, 1943

**PUBLIC HEALTH**

# Youngsters Immunized

Survey shows the majority of children have been vaccinated at some time against diphtheria and smallpox but few against scarlet and typhoid fever.

➤ A MAJORITY of youngsters are now immunized at some time against diphtheria and smallpox but scarlet and typhoid fever vaccinations, in comparison, are still negligible, a representative study of cities of 100,000 population or over reveals.

In a survey reported by Selwyn D. Collins, head statistician, and Clara Councill, associate statistician, of the

U. S. Public Health Service, a canvass of 213,931 households was made in 28 cities to learn the extent of immunization.

By the time children are eight years old 61% have been immunized against diphtheria as compared with 85% protected against smallpox. For the older children the percentage immunized against diphtheria declines, but for

smallpox it increases until the score sheet for 14-year-olds shows 90%.

For diphtheria immunization of two- and three-year-olds, which is especially important, the intermediate cities carried off top honors with 34% and 43% while the Western cities averaged only 14% and 19% for the two age groups. In these early preschool ages the South, which was lowest in most school ages, was higher than the Northeast and almost as high as the North Central—the highest sections for practically all school ages.

For smallpox the Northeast, intermediate cities, and the South all show above 90% vaccinations by the time children are eight years of age. The North Central and particularly the West are low. In the number of smallpox cases reported in the survey, the West is above any other section.

Evidence indicates that the level of diphtheria immunization has increased considerably since the survey was made, the researchers report, but the level of smallpox vaccination has probably little changed.

“The percentages of children who had been immunized against scarlet fever were too small in every region,” the report states, “to have much effect upon the prevalence of the disease.”

Immunizations did not get above five per cent for any age, although the North Central area and intermediate cities show the best record.

Typhoid vaccinations are even fewer; peak groups hardly top two per cent in any of the Northeast, North Central or intermediate cities. The maximum in the West was five per cent, while the

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South showed the best record for typhoid with a 13% maximum.

But the 13% appears to reflect the size of the typhoid problem rather than the effectiveness of controlling the disease, it is pointed out. Percentages of those

interviewed in the South who had a case history of typhoid stand well above all other areas and the mortality rates in the South were three times those in northern sections.

*Science News Letter, August 28, 1943*

#### MEDICINE

## Rehabilitate Wounded

Suggestions for the helpful behavior of the family and friends of badly wounded service man are given by the Army Surgeon General.

➤ ASSURANCE that the badly wounded service man will receive top-notch medical care and rehabilitation treatment is not enough to bring him back to normal life and happiness; readjustment can be undone or remain incomplete unless the everyday behavior of family and friends is guided by restraint, intelligence and consideration.

Suggestions made by the Surgeon General of the Army for lessening the adjustment difficulties of disfigured and disabled veterans were offered by the Office of War Information:

### The Nature & Properties of Soils

By LYON & BUCKMAN

Long the standard work on its subject, this book has now been thoroughly revised and brought up to date by Professor Buckman. It has been rewritten to incorporate much new scientific data on the chemistry and biology of soils. There is important material on moisture from the energy point of view and on the control of soil moisture; on colloidal clays, humus, and soil organisms and their enzymic effects; on soil reactions, buffering, pH correlations and liming.

499 pages. Illustrated. \$3.50.

The Macmillan Company,  
60 Fifth Avenue, New York 11

1. Treat the maimed person as the normal person he always has been. The man who has lost his jaw is still everything his friends have always known him to be. Personality and character are almost certain to be temporarily and superficially affected but disfigurement does not make him into a different person. Treated right, it may well result in his growing to be a bigger one.

Although disturbed by a man's appearance, discipline yourself not to let it show on your face or in your voice or manner. The mentally and nervously afflicted are simply ill; treating them as normal persons is particularly important.

2. Don't ask questions or give advice. A man may or may not want to talk about his disfigurement. Do not pry, hint or mention the subject unless he does. Talk about things he is interested in. If he asks your opinions concerning the adequacy of treatment he is receiving, or his chances of recovery, or prospects of getting a job answer them as best you can without doing harm. Advice without knowledge to back it up can do harm.

"Am I going to be good for anything?" asks the disabled man. A good answer is, "If you want to be good for something, determination helps." Should you know such a man intimately, learn about the rehabilitation and accomplishments of other persons as badly handicapped as he is. Then let him see that you know about them and that you assume he will take full advantage of his opportunities.

3. Be casual and realistic—not over-cheery. A wounded man may feel depressed. He has a right to feel so. A routine of transparent "cheeriness" by his associates is an offense to his dignity and his common sense. Nor is it usually convincing or beneficial to try to minimize the crippling effect of maiming.

## ● RADIO

Saturday, Sept. 4, 1:30 p.m., EWT

"Adventures in Science" with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Mr. Benjamin Y. Morrison, principal horticulturist in charge, Plant Exploration and Introduction, U. S. Bureau of Plant Industry, will speak on cinchona, the plant from which quinine is made.

Brought into the open and squarely faced, personal anxieties and problems of all kinds lose their capacity to frighten.

4. Don't wait on the injured man too much. Repress natural desires to help the disabled soldier or sailor at every turn. If his faith in his ability to do things is restored the rest of the treatment is easy. Even if a man eats clumsily or has to make an effort to get something for himself in another part of the room, let him do these things, within reason. If there is something the patient can do for you, let him do it. Helping others restores self-reliance and is an important part of rehabilitation.

Helpful behavior of the public toward the men is the last step in a list of rehabilitation measures planned by the government. Confidence-restoring work is started in Army and Navy hospitals and in the hospitals of the Veterans' Administration as soon as possible. A similar program is set up in the U. S. Public Health Service Marine Hospitals for disabled merchant seamen.

When a man has recovered his physical or psychological health and has been discharged from a hospital, and is in need of vocational training, he is eligible to receive it from the Veterans' Administration if he has suffered a 10% or greater disability while in service, resulting in a vocational handicap. If not, the same training is open to him without cost through the Vocational Rehabilitation Division of the U. S. Office of Education.

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#### AERONAUTICS

### Squadron of PBY's Make Pattern for Victory

See Front Cover

➤ A BEAUTIFUL photograph of a formation of these flying boats is shown in an official United States Navy photograph reproduced on the cover of this week's SCIENCE NEWS LETTER. The PBY Catalina is reported to be one of the Navy's most versatile bombers.

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