

## PSYCHOLOGY

# Strikes Are Preventable

Psychologists have the "know-how" to diagnose causes and apply remedies to the social disease of which strikes are a symptom.

➤ *PSYCHOLOGISTS and sociologists could help industry prevent strikes like the present work stoppage in the steel and coal industries. They have the necessary "know-how" to cure friction.*

*Strikes are symptoms of social sickness, just as fever is a symptom of physical disease. This is the opinion of psychologists queried by Science Service.*

*Modern doctors do more than give fever patients cooling baths to reduce fever. They go after the germs or other cause of the fever to get the patient well.*

*Social psychologists have better ways of treating social sickness than prescriptions for cooling off periods to avert strikes. They, like doctors of medicine, can diagnose the causes and apply remedies that will get the patient—in this case society itself—back on the road to health.*

## Strike Is Symptom of Underlying Social Ill

By DR. DORWIN CARTWRIGHT

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➤ A STRIKE should be conceived as a symptom of deeper and more complex social malfunctioning. This social illness has important causes stemming from economic and political institutions as well as from the behavior of individuals and smaller groups.

It is a characteristic of symptoms that they cannot be satisfactorily eliminated by dealing with them directly. Action can and must be taken to prevent their getting out of hand; the patient's fever must be reduced. But future attacks of the disease will be certain to arise unless the underlying causes are dealt with. This means that any attempt to prevent strikes by direct repressive action could at best only produce other symptoms of the same social illness.

Social science possesses the research tools needed for analyzing the social disease created by the current strike. The federal government could well afford to sponsor a commission of scientists to analyze specifically the causes underlying these recurrent strikes. Such a commission should examine the major sources of tension from the point of view of economics, sociology, political science, and social psychology. It would, of course, be devoted to the search for facts, and the discovery of causes and effects, and would therefore, be in no sense partisan. Only through such a genuinely scientific diagnosis can an effective remedy be prescribed. Although there is no precedent for such a commission, research techniques and scientific knowledge have developed in recent years to such a level that a significant contribution to the reduction of tension in the coal and steel industries could now be made.

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## Known Science Techniques Work in Settling Disputes

By DR. FRANCIS BRADSHAW

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➤ EXPERIENCE in conciliation in cases of labor strife and also marital relations and other types of friction show that four techniques are effective.

1. The disputing parties may be brought together to tell their troubles to a counsel. The counsel refrains from telling them what to do, but directs the discussion in such a way that the parties concerned think out their own course and arrive at their own agreement.

This technique, known as "non-directive counseling" has proved very effective also in the treatment of the mentally disturbed, whose conflict is internal.

The difficulty in applying this method in industrial disputes is that in order for it to work, the counsel must be invited or sought out by both parties. In an industrial dispute, one or both sides may lack any desire to arrive at a settlement.

2. The second technique is to tell the disputing parties to try this or that so that they will arrive at their own solution through experiment. This technique also works better in reconciling married partners than industrial associates.

3. The third technique is to arrange a change in the conditions which are instrumental in producing the friction. Thus a change in economic or political conditions might make it easier for industrial strife to come to peaceful solution.

4. The fourth technique is to change the attitudes of the key individuals toward themselves and toward each other. It has not been widely used because it is so difficult to achieve. It is very difficult to change



**DUST VAULTS**—Electronically-scrubbed air for steel mills is in the making on this assembly line at the Westinghouse Sturtevant Division plant in Hyde Park, Boston, Mass. The vault-like cubicles contain Precipitron cells, the electronic air cleaners which remove 90 percent of all air-borne dirt and dust. Each of these cubicles can clean more than 36 tons of air every hour.

an adult's way of looking at things, his notions of what he wants to get out of life, his feeling toward other men. Still it is not impossible.

Here are some of the ways attitudes can be changed.

One way to change a man's attitudes (and it is obvious in this case that somebody must change) is to search out the facts of the dispute by scientific methods.

Both sides in any industrial dispute must rely for strength in the show-down on the support of their constituencies and some of the public. Yet neither one actually knows what the men behind him really want. A scientifically conducted survey of what is wanted and needed by the stockholders, management, and the public would show each the limits of support on his side and just what he might concede without betraying his trust.

Psychological research and practical application in industry has demonstrated the value of "vertically organized" round-table discussion for producing attitude changes necessary to bring about industrial conciliation and peace.

This means bringing together not just the two top men in the dispute, but representatives of all the levels all the way down to the foreman who has direct con-

tact with the workers and the shop steward who is the worker's adviser in dealing with management.

Such round-table discussions should be implemented with all the tools known to psychological science. Sometimes it is found that the words basic to the discussion are not understood by those involved. In one situation, tests revealed that the average supervisor failed to understand 80% of the words used in the contract under controversy. The average union's shop steward missed 70%. Attitude tests given before and after discussion show that the participants do change their attitudes as a result of frank discussion in such a round table.

What is needed to prevent strikes is the determination by management to use systematically what is known to science. They must realize that human nature is as real and important in their business as are dollars invested or machines and materials. They should pay as much attention and spend as much money on research in human and personnel relations as they do on product research.

Tension and hostility must be located and reduced before it piles up like static charges to produce an explosion and uncontrollable catastrophe.

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#### METEOROLOGY

## Watch Smog Weather

► A STRICT watch of the weather is the chief of 10 U. S. Public Health Service recommendations for preventing future smog catastrophes such as hit the small industrial town of Donora, Pa., a year ago this month (Oct. 27, 1948).

If forecasts show a possibility of weather inversion, industrial plants should either be shut down or cut down their operations enough to reduce "sharply" the amount of contamination going out into the air.

A weather inversion, such as lasted five days in Donora last October, occurs when a layer of warm air settles over the ground air, preventing the usual updrafts.

The other nine Public Health Service recommendations have to do with reducing the gaseous and solid particle contamination of the air from both industrial plants and home heating plants, steam locomotives and steamboats. The recommendations come from an 11-month exhaustive study of the Donora situation. They presumably apply to other areas where a combination of air contamination and weather inversion produces smog.

Besides the 20 deaths at Donora last year, almost half the town's population were made sick by the smog, the Public Health Service scientists found.

With the Donora study giving "positive scientific proof" that contaminated air in industrial areas can cause serious acute disabling illness, the Public Health Service

plans an expanded program for fighting air pollution.

The possibility of the mind being affected, in terms of reduced alertness and efficiency, from living in constantly polluted air, is one of the serious questions the Donora study has raised, Dr. Leonard A. Scheele, Surgeon General of the U. S. Public Health Service, pointed out.

A preliminary report of the study was given by H. H. Schrenk, Harry Heimann, George D. Clayton and W. M. Gafafer of the Public Health Service and Harry Wexler of the U. S. Weather Bureau.

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#### BOTANY-CHEMISTRY

## Fertilizing, Fumigation Done in Single Operation

► A SINGLE spraying operation that kills plant pests and supplies plant foods at the same time was suggested to chrysanthemum growers.

At the flower show sponsored by the New York Botanical Garden and the National Chrysanthemum Society in New York, Dr. P. P. Pirone told of the recent development of a method of spraying plant nutrients directly onto the foliage instead of adding them to the soil. That was the old-fashioned way," said Dr. Pirone, a member of the Botanical Garden staff.

Although spray feeding is "still largely in the experimental stage" four or five applications weekly produce "vigorous, deep green foliage."

The newest insecticide for chrysanthemums, Dr. Pirone said, is the highly poisonous preparation called Parathion. It is almost totally effective against insects in one or two applications. Because it is dangerous to handle, he warned users to follow directions "to the letter" both indoors and out. By mixing Parathion, or the fungus-killer Fermate, with liquid fertilizer, "pest control and better foliage growth are achieved in one operation," Dr. Pirone pointed out.

For destroying the foliar nematode, a microscopic worm which blights chrysanthemum leaves, a solution of sodium selenate is applied to the soil. Because sodium selenate too is highly poisonous, Dr. Pirone cautioned against planting food crops in treated soil. Food grown on such soil will absorb some of the poison rendering it unfit for human consumption, he said.

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#### ENGINEERING

## Coal Mine Safety Aided by Preventing Electric Arcs

► A FORWARD step in safety in coal mining comes from recent developments to prevent electric arcs or sparks jumping from power lines or car tracks to the tubing that brings air to the compressed-air blasting device now used in many mines.

Such arcs or sparks may cause explosions and fires in a coal-dust laden atmosphere. Details of two recent developments have just been released in a report of the U. S. Bureau of Mines which is available free from the publications section of the Bureau at Pittsburgh. It is entitled TWO DEVICES TO PREVENT ELECTRIC ARCS WITH AIRDOX OPERATIONS IN COAL MINES.

Airdox is a system of blasting out coal faces with compressed air instead of the usual explosives. Giving no spark, it creates no fire hazard. It is now in wide usage particularly in Indiana and Illinois coal fields. The breaking of the coal comes from the sudden release of the compressed air within an ordinary drill hole in the coal.

With the Airdox, compressed air is brought to the working area by steel pipes, and copper tubing carries it from a control valve to the Airdox shell at the coal face. The first safety device is a steel-reinforced rubber-jacketed tubing 50 feet long to replace the copper tubing. The second safety device is a coupling consisting of two small steel blocks with insulated bushings installed between the copper tubing and the steel line. Similar couplings are placed at 1,000-foot intervals in the air line. These will aid in preventing sparks at the face.

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