ing need is for more trained psychiatrists, psychologists, and other professional personnel. Without them, the war against mental illness will never be won.

Mental Health Clinics

Some help is being given by the mental health clinics spotted around the country. These clinics are able to provide psychiatric treatment for men, women and children with less severe mental disorders and to help them resume healthy, useful lives.

But this type of treatment is limited also. There are only about 1,200 clinics in the entire country, and half of these only give part time service. One state has no clinic, while others have only one or two for their entire population. More than half of the nation's total number are located in the northeastern part of the country, an area that contains only one-fourth of the population.

There should be at least one clinic for every 50,000 people, or a nation-wide total of 3,300 full time clinics, the Association reports.

Add to this the lack of hospital space, inadequate treatment facilities, and scarcity of trained personnel, and it is easy to see mental disease is still far from being conquered.

Public Support Needed

What is needed is the same kind of concerted support the public gave to conquer polio.

Modern methods of treatment have shown the mentally ill can come back if they have the treatment they need, and receive it on time. You can help them get their chance by supporting the Mental Health Campaign during May.

The campaign is being conducted by the National Association for Mental Health and its 500 affiliates. The association is the only national citizens' organization devoted exclusively to the total fight against mental illness. It is a voluntary, non-profit organization whose program has been approved by the National Institute of Mental Health, U. S. Department of Health, Education and Welfare, and the American Psychiatric Association.

Your contribution will support research projects, establish community clinics, and train more personnel. It will give today's mental patient the chance you would want for yourself—the chance to get well and come home.

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RADIO

Saturday, May 4, 1957, 1:45-2:00 p.m., EDT.

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Seven boys and girls, finalists in state and regional science fairs, will discuss their projects which won them trips to the National Science Fair in Los Angeles, May 9-11.

TECHNOLOGY

More Plastics Foreseen For Rocket Part Use

➤ GREATER USE OF PLASTICS in airplanes, rockets and missiles was forecast at the Society of the Plastics Industry Conference in Los Angeles.

Plastics that will withstand temperatures greater than 1,000 degrees Fahrenheit for one or two minutes at high gas velocities are being developed, four scientists of the Aerojet-General Corporation said.

In addition, plastics that will permit long-duration firing and plastics that will permit structures to carry loads despite high internal temperatures developed during firing are also being made.

These developments, the scientists pointed out, will mean an increasing demand for reinforced plastics for rocket chambers, war heads, nozzles, insulators and other components of rockets and missiles.

The rocket industry has found reinforced plastics useful because they provide high strength-to-weight ratios; desirable thermal properties; are non-critical materials; have versatility of formulation; and are inexpensive for complex shapes and limited production, G. Epstein, J. W. Eberhardt, J. Goldberg and H. A. King explained.

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PSYCHOBIOLOGY

Expectant Mother's Fear May Affect Baby

➤ THE OLD popular belief that if an expectant mother is badly frightened the child will grow up to be more emotional than are normal children may have some basis in fact.

Some supporting evidence for the belief was obtained in experiments on rat mothers-to-be reported in the journal *Science* (April 12). The experiments were conducted by Dr. William R. Thompson, psychologist of Wesleyan University, Middletown, Conn.

Experiments cited by Dr. Thompson also indicate that such hormones as cortisone, adrenalin and one of the ACTH drugs injected into an expectant mother may have drastic effects on the unborn child.

Before they were mated, female rats were taught by Dr. Thompson to expect a strong electric shock at the sound of a buzzer. Then they were taught to avoid the shock by opening a door and running through to safety.

When the rats had learned this, they were mated. As soon as the experimental animals were known to be pregnant, they were exposed to the buzzer three times every day on the shock side of their box. The shock was turned off but the door to the safe side of the box was locked.

This situation was intended to rouse strong anxiety in the pregnant rats which would cause the release of hormones into the mother rat's blood stream and which, in turn, might be transmitted to the young through the maternal-fetal blood exchange.

After birth of the young, their emotionality was tested and compared with that of the young of mothers who had not been frightened.

The emotionality of the experimental young was found to differ strikingly from that of the controls and the differences persisted into adulthood.

Further research is necessary, however, Dr. Thompson warns, to wipe out some remaining doubts. It is possible, for example, that the sound of the buzzer was strong enough to affect the unborn animal directly rather than through release of hormones in the mother. It is also possible that, despite special care taken to avoid it, the experimental animals may have belonged to a more emotional strain than the control animals.

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PHYSICS

Unknown Interiors of Atom Cores Shrinking

➤ THE DARK unknown interiors of atomic cores are shrinking.

Just as scientists once considered the atom the smallest indivisible particle and then discovered that it had a cloud of electrons swirling around a central nucleus, so now they are finding the hard core of the nucleus is soft and fuzzy. Slowly they are probing its innards.

The behavior of the outer fringes of the nucleus is well-understood both theoretically and experimentally. Physicists are now beginning to penetrate the intermediate zone, but the central part remains a mystery.

However, the size of the mysterious core had been whittled in half, down to about 5 times 10 to the minus 14 centimeters, or about one-hundredth of a millionth millionth of an inch.

At the Seventh Annual Conference on High Energy Nuclear Physics at the University of Rochester, about 300 of the world's top experts reported their most recent findings concerning the atom's core. (See pp. 258 and 261.)

One way of probing nuclear structures is to hurl tiny bits of atoms such as electrons and protons at other atoms in powerful man-made accelerators. Nature does this in the form of cosmic rays bombarding the earth from outer space. Tracks of the particles resulting from these atomic smash-ups are caught on photographic emulsions, giving scientists clues to nuclear structures.

Because most of these particles do not fit into any current theories, they are known as "strange" particles. In recent years scientists have discovered these unexpected inhabitants of atomic cores in bewildering numbers.

One aim of this Conference was to try to find a general law from which the masses and other properties of all such particles can be predicted.

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