provement in either the behavior or the neurotic traits but no improvement in the speech. The cases in which greatest improvement took place were those in which both general psychiatric and specific speech treatment were systematically carried out.

Science News Letter, February 28, 1942

Noise to Please Oneself

"ONE makes noise to please oneself and language to please mothers and, later, neighbors."

This sums up the child's own feeling about a conflict which makes some children stutter, in the opinion of Dr. John A. Rose, of the Winston-Salem, N. C., Child Guidance Clinic and the Bowman Gray Medical School.

Primary function of speech is self-expression. Imposed on this is the function of communication. When families and their social group place much emphasis on this second function of speech, perhaps hero-worshiping political and religious orators, the child may either struggle against this attitude and become a stutterer or he may take on the family attitude and become a "verbalist."

Fundamentally, stuttering and other speech disorders like feeding and school problems, arise from a "troubled child-parent relationship."

The child guidance clinic, working as it does with both child and parents, therefore has a chance, Dr. Rose believes, even with its limited time, to help with the speech difficulty.

Science News Letter, February 28, 1942

Children's Fears Traced

EXTREME fears in children, shown by sleepwalking, night terrors, nightmares, inability to sleep and phobias about spiders, cats and death of one or both parents, can be traced to neurosis and instability in the parents and disturbance in their relationship, Dr. Jacob Kasanin, Dr. Joseph Solomon and Miss Pearl Axelrod, of Mount Zion Hospital, San Francisco, found in a study of anxiety states in 20 children.

The anxiety state may develop as early as the age of two years. The children in the San Francisco study were between the ages of four and 12 years. None of the mothers could be considered stable, mature women, and many of the fathers were also neurotic.

Both parents and children were treated and when the parents were able to overcome their anxiety and take a more grown-up attitude toward their problems, the children invariably improved.

When parents were consistent in showing they did not want children, the latter were less likely to become extremely fearful than when the parents were neurotic and varied between over-devotion and extreme hostility.

More boys than girls were brought to the child guidance clinic for treatment, perhaps because fears in girls are not considered unnatural, whereas when boys are fearful the parents are more likely to be concerned and to seek help for the child. Results of treatment were worse with the girls than with the boys, however, probably because none of the girls had a stable father and their mothers were more neurotic than the boys' mothers.

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METALLURGY

Old Tin Cans Chemically Exchanged Equally For Copper

Iron Is Thrown Into Mine Waters Containing Copper Sulphate; Iron Salt Formed, Copper Precipitated

GETTING copper from old tin cans sounds like a miracle but it is just good chemistry. Old tin cans may be chemically exchanged for an equal amount of copper by cutting them up into small pieces and throwing them into mine waters containing copper sulfate. Iron sulfate is formed and flows away while the precious copper is saved.

Three plants in the Southwest are planned by the Defense Plants Corporation for cleaning and shredding the cans and sending them to the copper mines. Towns in the locality have been urged to start collecting cans. About 2,000 tons of copper per month are expected to be recovered by this extension of an old practice. Normal consumption in the United States is about 60,000 tons per month.

The process by which cans are chemically exchanged for copper is simple. The iron and tin simply replace the copper in the sulfate and are carried away by the mine waters. The copper, being squeezed out of the sulfate, is precipitated in metallic form on the can. As the latter slowly dissolves away and is replaced by copper, it gives the impression that the tin can has been miraculously converted into a copper one. That would be a miracle indeed without an atom smasher. But the mine water loses its bluish color by the extraction of the copper and becomes yellowish from the addition of iron and tin, indicating that there has been a chemical exchange, not a transmutation.

The process is not new, but formerly scrap iron and even new iron was used. It was discovered accidentally years ago, so the story goes, when Jim Lefad of Montana threw some tin cans into a stream of mine water that flowed through his back yard. Next morning he found in place of them a sludge of copper which turned out to be 98% pure. He contracted for all the mine water for a year and cleaned up $90,000 that year.

The tin and iron are of course not recovered in this way, but the cans would be thrown away anyway, unless detinning is successfully established all over the country. Even so, the remainder of the can after detinning could be used in the copper recovery process. And this might be the best use of it, for this iron is not even regarded as good scrap because of the tin remaining in it. The detinning processes so far used remove only about half of the tin in the can, the other half remaining in the iron and unfitting it for many purposes. But it would be no obstacle in the recovery of copper from its sulfate solutions.

The War Production Board's Bureau of Industrial Conservation has proposed collection of cans in the areas around Pittsburgh and Sewaren, New Jersey, where there are detinning plants. If experiments in these areas are successful, collections will be extended to other cities where there are detinning plants.

Housewives will be asked to clean the cans after food has been removed, to cut off the bottoms as well as the tops, and to flatten the remaining portion of the can.

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