

kept clear of total wreck. And in the end this heroic experiment in democracy justified itself.

After a sufficient period of experience in wrestling with their own problems, the children quite generally approved self-government system. What opposition there was came mostly from adult outsiders. Dr. Mowrer answers these critics with the suggestion that those who disapprove democratic self-government for children are akin to those who in every society "strive to achieve or maintain positions of power and special privilege by promoting servility on the part of the masses."

The first thing that had to be done with the group of over-repressed children with whom Dr. Mowrer worked was to let them learn for themselves the difference between "don'ts" that are arbitrary and meaningless, and "don'ts" that really mean something—that are warning signs on the road to trouble.

The 24 members of the group, ranging in age from four to twelve years, were called together. It was explained to them that in the future they might meet, with the adults who were taking care of them, whenever it seemed necessary. They were to deal for themselves with whatever problems might arise.

#### Utilitarian Morals

The idea of social morality was put on utilitarian basis. It was pointed out that stealing, for example, was objectionable not simply because grownups might say it was "wrong" but because if one child could "get away with it" presently there would be no safety for the belongings of anyone. Similar utilitarian values were explained for telling the truth, keeping clean, and so on.

Naturally, the kids were not expected to take the grownups' word for all this. They were left to learn from experience the practical truth behind the precepts.

On one occasion, four or five small boys thoughtlessly broke out some window screens on a play-porch. Their offense was brought before a meeting of the group, and the culprits were told that they had to earn the money to pay for the damage they had done. This of course took time, and during the interim the screens were left just as they were. The whole group were bothered enough by flies and mosquitoes so that they had the lesson of respect for community property firmly fixed in their minds.

"A few such empirical lessons made the restraints essential for harmonious cottage life take on a reasonableness

which could have scarcely been achieved through arbitrary adult enforcement," comments Dr. Mowrer.

The whole experiment came out better than anyone had expected, he states: "Some of the advantages which accrued from this new regime had, of course, been anticipated but others had not.

"As enforcement of the necessary regulations and prohibitions was taken over more and more by the group itself, the staff members ceased to be regarded primarily as disciplinarians, who were to be outwitted, harassed, or placated, as the occasion might demand; and the total number of infractions which had to be dealt with decreased at a remarkable rate. The children became much freer in their relationships with the adults, able to share their phantasies and to speak about matters which, because of previous anxieties or resentments, would have been impossible to discuss.

"Soon the cottage meetings also came to be used as occasions for reporting commendable as well as objectionable behavior, and an additional motive for good behavior, in the form of a desire for group praise, was thus added to the

already existing influence of group disapproval.

"In the beginning it was found that the children were inclined to be more severe with each other than an adult would have ordinarily been under similar conditions. Since the meetings are always conducted under the supervision of representatives of the staff, over-severe punishment could always be toned down to be in keeping with the offense. This placed the adults in the strategic position of being able to befriend and protect the offender instead of having to be aligned against him."

Be it remembered, too, that this group of children started from away behind scratch. They came to Dr. Mowrer a badgered lot of embryo Fascists. They learned democracy by practicing it, by applying its methods toward the solution of their own problems. In this small-scale test, therefore, there would seem to be justification for Jefferson's dictum: "The cure for the ills of democracy is more democracy."

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#### PHYSICS

## Radioactive Grease On Metals Will Detect Surface Flaws

**S**PECIAL greases that give off piercing radiation are now being used by scientists to detect flaws in metals, it was reported to the American Society for Metals by Herman F. Kaiser of the staff of the U. S. Naval Research Laboratory, Washington, D. C.

The Navy already uses piercing rays from radioactive materials to see inside heavy armor plate and spot flaws. The newer method, if it works out successfully, would supplement this practice by bringing out tiny surface flaws which might escape attention.

In the tests, Mr. Kaiser indicated, compounds of thorium, which are weakly radioactive and liberate radiation, are mixed with amber petrolatum. This material is smeared over the metal under study. The coated metal is then placed in a chamber where the grease is forced into any crack by a pressure of 1,000 pounds to the square inch.

Next, the surface is cleaned with alcohol to leave only the grease which has penetrated into cracks. The metal is then carefully wrapped in photographic sensi-

tive paper and stored away for a week.

On development of the negative, those portions over a crack containing the grease show up as dark streaks on a white background.

The method is reminiscent of the original discovery of X-rays by Roentgen, who found that light-shielded photographic plates were exposed by X-radiation.

The method, too, resembles a common rough test used by geologists to test a piece of ore for possible content of radioactive material.

Much work on the technique will probably be needed before it can go into standard use, Mr. Kaiser pointed out, but "the possibilities offered by the natural radioactive elements are found to be quite promising."

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Within three years 448 Wisconsin beavers have had compulsory moving days to keep them from building dams where they would cause destructive floods.