CHILDREN WITHOUT BROTHERS AND SISTERS FOUND TO BE BRAINIER

Do not pity the only child. He has more brains than children with many brothers and sisters, according to conclusions reached by Dr. Hornell Hart as a result of a study of 600 families in a typical Iowa city. The results have just been reported to the Iowa Child Welfare Research Station at Iowa City.

Children from large families are handicapped mentally, morally, and socially, Dr. Hart declares.

In a representative sample of children from practically completed families in Davenport, Iowa, the ability of the children as determined by mental tests was found generally to run higher the fewer the number of surviving children. Children with no living brothers or sisters tend to have mental test quotients about fiftee points higher than children with eleven living brothers and sisters, and the average mental test ability decreases fairly steadily as the size of the families increases.

"School progress, in excess or defect of the amount to be expected from mental test ability, is at a maximum in families of four or five living children, and at a minimum in families of ten children or over," Dr. Hart says. "The difference between the progress inschool of these two groups is such that the average child in the very large family loses about one-third of a year through conditions other than mental test ability associated with large families.

"The larger the family the greater the tendency is for the children to leave school at the earliest possible age.

"Of families with seven or more living children, fourteen per cent. are chronically dependent, as compared with three per cent. among families with six children or less.

"As far as can be ascertained from teachers ratings, children in large families are less energetic, less kind, less sincere, and less honest than children from small families. This conclusion is fairly certain for energy, but not so decisive for the other characteristics.

"Contrary to general impression, children without brothers, and sisters compare very favorably with children having brothers or sisters. Birth order, as far as it was studied in this inquiry, appears to have bery little significance."

FRENCH USE WIND TO CUT COAL BILL

French engineers are planning extensive plants of windmills to reliasethe country of its heavy burden of payment for imported caol. The Eiffel tower in Paris has been employed for experiments on the best means for the utilization of wind power and from these results a form of windmill has been devised which is very different from those in use elsewhere, and, according to the calculations of Lapresle, much more efficient and economical than the American and Dutch types. Our windmills are from 8 to 16 feet across and have 18 or more blades. The new French type has only two blades but these are made much longer. The plans contemplate windmills with two blades revolving in a circle 100 or 130 feet in diameter

In the last number of the French scientific journal, LaNature, Constantin,

leader of the syndicate of engineers who have been studying the question of wind power since 1907, calculates that the hundred-foot windmill in a 13 mile wind will give 50 horse-power, and the 130 foot windmill will give 90 horse-power. With a wind of 22 milesan hour the smaller wheel will give 240 and the larger 400 horse-power.

Constantin proposes to install a series of 130 foot windmills on Mont Ventoux, five thousand feet above the sea, and figures out that a single machine would deliver an average of over 700 horse-power throughout the year. The velocity at the extremity of the blades in the fastest wind would still not be more than half that of the blades of an airplane propeller, so there would be no danger of their flying off

The wheel is to be connected directly with a dynamo to convert the rotary motion into electrical current and do away with gearing, cranks, or cables. The dynamo is encased in a light shell constructed on stream lines like a fish, so as to offer the least resistance to the wind. The wheel and dynamo turn on a common axis as the wind shifts.

A row of a dozen or more such windmills are to be connected with an "aeolian central" where the varying currents are brought together and transformed into a single current of constant intensity that goes out to the consumers. The surplus electricity at hours when the demand is slight is to be used in electric boilers in making steam, which may be stored in accumulators to be used as needed for heating or power.

It is anticipated that the power thus derived from the wasted energy of the air may serve to warm houses, run shops, drive shop machinery, heat metallurgical furnaces, and run trains. It is also planned to use windpower to propel vessels against the wind. Constantin and Joessel equipped a five ton boat, the Bois-Rose, with a thirty foot air screw, connected with a fory-two inch marine propeller, and navigated this vessel on the Seine at Paris in all directions without disturbing the ordinary traffic. The vessel made about four and a half miles an hour in the face of a fifteen mile wind.

ARMY WORM PLAGUE CHECKED

The outbreak of the army worm in Illinois has been brought under control, according to Prof. George A. Dean of the U. S. Department of Agriculture, who declared that the pest will not prove as damaging as was feared, not reaching the extent or severity of the attack ten years ago. A similar outbreak in Iowa is reported to have been checked before it got well under way.

This caterpillar of an insignificant moth or "miller" has been represented as moving very rapidly over several counties when in full action. An army worm has been known, according to Professor Dean, to cross an 80 acre field, a distance of one fourth of a mile, in 24 hours, which may be regarded as rapid for a caterpillar. But as the length of life of an army worm is from seven to ten days depending upon the temperature, the distance an "army" can travel is limited. The distance a worm army travels depends largely upon the amount of food it finds. If, upon emerging from the eggs, the worms find only a thin covering of vegetation, the urge of hunger will compel migration and they will turn to grasses, young wheat, alfalfa, and other tender plants. If there is sufficient food to carry them through the worm or caterpillar stage, they travel no farther.