

and are arrested in their progress by friction with the air, they are heated, and disappear in a flash of light. The effect of radiating from one point is one of perspective. Their paths seem to converge in the distance like the parallel tracks of a railroad.

That the Perseid meteors are associated with Tuttle's comet, which was last seen in 1862, was the discovery of a distinguished Italian astronomer the centenary of whose birth was commemorated earlier this year. Giovanni Schiaparelli was born March 14, 1835, and died in Milan on July 4, 1910. In 1866 he showed that the path of the Perseid meteors corre-

sponds exactly with that of Tuttle's comet, so there now seems no doubt that the meteors are the remains of the comet. Since that time the relation has also been shown for other comets and meteor showers. Schiaparelli is also known for his discovery of the peculiar straight markings on Mars, which he called "canali," meaning "channels," but which have always been mistranslated into English as "canals," thus implying an artificial origin, though this is seriously questioned. His name is well known today, though in a very different field from astronomy. His niece has achieved fame as a dress designer in Paris.

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PSYCHOLOGY

General Scientific Ability Believed Non-Existent

IS THERE a scientific type of mind? Does the great chemist who studies the building matter of the world share with the astronomer who searches out nebulae beyond our galaxy some special talent setting them apart from their fellow men?

A British psychologist has weighed this problem and gives the encouraging answer "No."

"No child should be denied the right to receive a scientific education," declares Gordon A. Jahans (*Discovery*, June). "Every child is capable, within the limits of his general intelligence, of performing the mental processes involved in scientific thinking."

Intelligence Mr. Jahans likens to a boiler which gives energy to all the different sorts of mental activity that must be engaged in by the scientific man. But beyond this common source of power no "general scientific ability" exists to be shared by physicist and chemist, by botanist and physician.

Novel tests were prepared by Mr. Jahans to reveal an individual's ability to do scientific thinking. Mathematical ability and language ability, which are known or thought to be special talents, were left out of these tests by the expedient of using no words or number problems but only colored patches and forms of various sorts. Two of the problems were concerned with the classification of the forms according to given schemes.

In one set the task was comparable to that of the botanist who must sort out a group of leaves according to whether

they are simple or compound, smooth-margined or toothed.

In the other set the task was more like that of the physician who must look for a certain set of signs or symptoms and note how many and which are present in a given set.

These tests were given to a number of children. After allowance had been made mathematically for their general intelligence, no relationship was found between ability on one of these tests and ability on the other.

The human mind evidently holds no special department equipped for the solution of scientific problems. If your son is a bright boy and he wants to be a scientist, the field is his.

That is the conclusion of Mr. Jahans. Another interpretation of his results seems possible, however. It may be that the great botanist achieves his distinction because he possesses individual qualities differing not only from the mental traits of the unscientific, but also from those of the physician and all other scientific men.

Perhaps every child does have a special "bent." If he has within him the making of a chemist, it may be that training could never make of him an astronomer great enough to equal his potentialities in his own field.

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The earliest astronomer, physicist, and clockmaker in the history of science, says Dr. J. H. Breasted of the Oriental Institute, was Amenemhet, who lived about 1550 B.C. in Egypt and left his autobiography on his tomb-chapel wall.

ENGINEERING

Clean Disposal of Waste Provided by Food Grinder

ELIMINATION of the garbage can, with its unpleasant accompaniments of flies, ants, odors and stray pieces of decaying food, is foreshadowed by the invention of an electrical device disposing of waste food by way of the kitchen sink.

Driven by a small electric motor taking current from the house circuit, the device, developed by the General Electric Company, reduces waste foods to a fine pulp which washes down the drain into the sewer without clogging. Everything from watermelon rind to soup bones can be shredded and macerated, the only exceptions being bottles and tin cans. Tests trying out the device over the period of a year in a number of ordinary homes, including that of Morris Cohn, sanitation engineer of Schenectady, failed to discover any weaknesses. All kinds of food were handled with ease, and no drawbacks developed. The extra amount of water used in flushing was negligible, amounting to but one per cent. From the standpoint of use of electricity, the average cost of operation per month is about half that of an electric clock. Grease and oily substances coagulate and pass through the pipes without clogging or coating, it is claimed.

The grinding unit weighs about 75 pounds, and the grinding knives are made of carboloy, an alloy metal of extreme hardness. Operation is very simple, requiring not more than five minutes a day.

Disposal of garbage by grinding it and washing it down the drain is not quite as simple as it sounds, according to Public Health officials and sewage disposal experts in Washington. There would be no Federal or state objection to such a method, which has many advantages, but its success would depend upon two important local factors. The first is the ability of local sewer pipes to handle the added solid material without "sludging up" and second the capacity of the local sewage plant in regard to disposal of solid matter. In localities where the sewage is dumped into the river without treatment there might be problems caused by settling sediment in tripled amounts.

Providing these objections can be overcome, the consensus seems to be that the plan might have possibilities, although all stressed that it is entirely a local matter for consideration individually by each town or municipality.

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