

in its high-school phases; (*b*) that he should consider his subject in its rise and development as a factor in education; (*c*) that he should present an historical view of his subject in regard to methods as the best safeguard against a mechanical and slavish copying of educational devices; (*d*) that he should consider the educational function and value of his subject; (*e*) that he should treat his subject in its co-ordinate relation to the other subjects of the curriculum.

8. That, finally, since a large part of normal-school work is to fit teachers for the district and country school, it is advisable to have a type of this kind of school in the training department.

CHAS. DEGARMO.

THE CONTENTS OF CHILDREN'S MINDS.

IT will be remembered that several sets of interesting investigations have been carried on in Germany and France with a view to determine what the actual content and capacity of the child's mind are. In 1882 Prof. G. Stanley Hall tried experiments with Boston school-children, similar to those made abroad, and published his results in the *Princeton Review*. The December issue of the London *Journal of Education* contains the record of a similar investigation undertaken by an English teacher. The following abridged report of it is not only of interest in itself, but especially for the purpose of comparison with the results of the attempts elsewhere made for the same purpose. The answers were given by six children. Unfortunately, the results obtained under the heads of 'Observation' and 'Information'—the most valuable of all—are very briefly given in the original. The following are some of them:—

What is bread made of? What is the use of sleep? How would you get a garden full of flowers? What is the color of railway-signals? How do chickens come into the world? In respect to all these questions, the children failed to differentiate to any great extent. To the question 'How many legs has a spider?' A answered, "Six;" and E, "I almost think six. I killed all the spiders in aunt's garden yesterday."—"Why?"—"Oh, just for sport." To the question 'Mark the length of a foot on this bit of paper,' A marked 1 foot 3 inches; B had never heard of a foot; C, 8 inches, remarking, "Some people's feet are as long as this, aren't they?" D drew a correct foot, having toes and heel; E marked 2 inches; F, a foot and a half. To the question 'Who rules over England?' A and E answered, "Queen Victoria;" B, "The King, I don't know who the King is;" C and F did not know; and D made a rigmorole statement about railway-lamps, because he could not answer the question, but wished to show that he knew something else.

The questions were put to each child alone, and they had no opportunity for talking about them with their companions. The questions were introduced after a friendly talk with the child, and after shyness had somewhat worn off. The attempts to draw out a child's moral notions almost invariably failed, as the children grew shy. The children are indicated by letters. A, B, and C were girls, aged respectively 8, 7, and 6. A was F's sister, and came from a cultivated home, as did all but C. D, E, and F were boys, aged respectively 7, 7, and 6. A had been running wild for weeks, F for months. D had attended school for a short time. C and F had had home teaching. The children enjoyed the questioning greatly, and it was more difficult to keep them to the point than to extract answers from them.

Below are given a selection of the questions and answers, under the heading of the faculty which they were designed to test:—

Reasoning Power.

1. Why do children have to go to bed so much earlier than grown-up people?
 - A. Because it is better for them; I don't know why. Is it to make them strong?
 - B. Because they are not so old. I don't know any thing else.
 - C. Because they are little. To make them get up early.
 - D. Because they get so tired. I think it is a good plan.
 - E. Because they get so tired, and because they are smaller.

- F. Because children are younger, and they must get more sleep, and that they don't get so tired as grown-up people.
2. If your porridge is hot, why do you eat the outside edge first?

A [had never heard of porridge, so took soup]. Because it would be cooler. I don't know why.

B [pea-soup taken]. Because it is colder; because the edge of the plate goes round it.

C [porridge]. The edge, because it is cooler, because the plate is cold.

D. I should eat the edge first because it is cooler; because it touches the mug, and the mug is cold.

E. Round the edge because it is coolest, because it is against a cold basin.

F [had heard of, but never seen, porridge; soup taken]. Because it is cooler. I don't know why it is cooler.

3. Do crossing-sweepers like fine or wet weather better? Why?

A. Wet, because they have more crossings to sweep, and will get more money.

B. Fine, because it does not rain.

C. Wet weather, because they get more money.

D. Fine, because he can be outter more, and can sweep the roads more. Do they get money for it? I should not do it unless I had money given to me.

E. Fine weather. Well, perhaps they do like wet weather for more sweeping. They like it wet, and then to leave off raining while they sweep.

F. Wet, because they get more money, because people don't want to walk in the mud.

4. What is the good of going to school?

A. To learn your lessons; to learn every thing. ["Will you have learnt every thing when you leave school?"] No. ["Then why don't grown-up people go to school?" A looked puzzled, then said] Because they know what little people don't, but they don't know every thing.

B. To learn to write and to play.

C. To get you clever. I think every one gets clever who goes to school.

D. Because it teaches you to know things when you grow up. ["What things?"] Oh! about trains and how the lines are made and laid down, and all that—and—Oh! [he looked quite awe-struck] is it not a wonderful thing how an engine is made?

E. To learn things; reading and writing, sums, and the multiplication-table.

F. To learn something. I don't know any thing else.

5. I gave the child several sticks of the same length, and asked it to make a cage for a bear with four sticks, so that it could not get out; then with three sticks, then two.

A. I don't know how. ["Try."] How big is the bear? [Gave a piece of paper to represent bear.] First took five sticks, then right with four, then right with three. ["Now try with two."] Promptly, "I can't, unless the bear can get in here," putting the sticks side by side, and she slipped the bit of paper between, but said at once, "It would slip out at the end."

B. Did all right; tried a little with two sticks, then said emphatically, "No."

C. Four and three right at once; when asked to try two, said roguishly, "I'll have to make a cage with one next, I can't do it with two."

D. Four, right; three, first wrong, then right; with two, tried again and again, and needed help to see that it could not be done.

E. Four and three, right; then said, "I don't know how we are going to manage with two." He tried, but at once gave up.

F. Four, right; three, "I can't;" then, very quickly, "Yes, I can"—right. Tried two, but said at once, "No, I can't."

Imagination.

1. What is the moon?

A. A light.

B. A man. I don't know why I think so.

C [laughing]. *We* call it a cheese, but it isn't really. I don't know.

D [reverently]. The moon is God. ["Is that exactly what you mean?" No; I mean because God made the moon; I don't know what it is at all.

E. I know it is a big thing, and I think to myself it's something like the sun: it shines just as bright.

F. Don't know, never thought.

2. What is thunder?

A. When clouds meet together and make a great noise; when they bang together.

B. Don't know.

C. Thunder makes a noise, that's what it is.

D. Long pause; then, "Is thunder God? Well, God sends thunder, does not he?" Then followed a long outpour on the folly of standing under a tree during a thunder-storm.

E. A rolling thing that makes a great deal of noise, that's what it is.

F. Nasty little beasts. Further inquiry brought out, "It kills nasty little beasts that eat the cabbages."

3. If you went up in a balloon higher and higher, what would you come to at last?

A. The sky. The sky is heaven. [Very shyly] I forget what heaven is.

B. We should come to the sky: the sky is water.

C. I don't know.

D. I don't know; but I know if you go up high enough you can't breathe [here followed remarks too numerous and rapid to be taken down].

E. Clouds and heaven.

F. Come to the sky. I don't know what the sky is.

4. What age do you think it would be nicest to be, and why?

A. I don't know. I don't want to grow older all of a sudden.

B. Twelve [but she was too shy to tell me why].

C. Seven, because it is a year older, because then I should not have to go to school so long.

D. Nine, because I think then I should know a little more.

E. Well, for myself, I should think about thirty, because you would be of age, and could do nearly what you liked. I should go to theatres and cricket, and play football and run races. ["Shall you do any work?" Oh, yes! "What should you do?" Well, if I had my own choice, I should not mind being a coachman, that's what I like — *horses*. "Do you like dogs too?" Well, I haven't had much to do with dogs.

F. Twenty, because I could wear trousers then — and what age would *you* like to be?

5. What do dogs think about? Can they talk to each other? How?

A [much amused]. Oh! I don't know; I don't know if they think or not. They talk in their way, I don't know what they say.

B. Don't know. I don't think they do think. No.

C. They don't think at all, do they? They can bark, not talk properly, but they understand each other.

D. Think about nothing but eating. No, except they can bark.

E. *Some* dogs think about biting people, some about eating things, and some dogs think about being kind to people. They talk in a dog language that people can't understand.

F. Biting and fighting. I don't know any thing else. Yes, they bark.

6. If you could go to the bottom of the sea, what should you expect to see?

A. Sand and stones and fish. I don't think there is any thing else.

B. Animals, fishes, sand, and stones; nothing else.

C. You would not see any thing, because it is so dark when you are under the sea.

D. I have never seen the sea. ["Tell me what you think it is like."] It's blue, and the waves come up higher than

this chair. I should see a lot of sand, and a lot of shells, and a lot of fishes, and a lot of crabs. They bite your legs dreadfully, crabs do.

E. Fish and shells, seaweeds, and some boats, perhaps, that had sunk; jelly-fish, I dare say, and I've heard [very mysteriously] that there are mermaids, but I don't think so, do you?

F. Fishes, people which have been drowned.

7. What are fairies? Where do they live?

A. There aren't such things.

B. Don't know. They are just fairies. I don't know where they live.

C. Don't think I ever heard of them.

D. Fairies are spirits: they look rather like an angel. Yes, rather. We can't see angels; there might be an angel in this room, and you and I could not see it. Angels are so light, any one could lift an angel. When Jesus was on earth there were angels. Do you know what wonderful things Jesus could do? [A fluent story of the paralytic man followed.] That was years ago, they don't do such things nowadays. Fairies live under trees; acorns are their tea-cups.

E. I know there are those, because there was one screamed out to mother. Very little things, I expect, not much larger than this [he measured about an inch and a quarter]. They live in the woods and under toad-stools. I expect they come into our houses at night.

F. There are none.

Sense of Beauty.

1. What flower do you think the prettiest, and why?

A. Oh! they are all so pretty; I don't know. ["Suppose I promised to give you a nosegay of several pretty flowers, which would you choose?" Forget-me-nots and violets, and daisies and may-blossoms; I don't know what else.

B. Gardinias, because they smell so nice.

C. A rose, because it is a very pretty flower; there is nothing else like a rose.

D. A sunflower, I think, don't you? ["I think I like some others better."] Oh! but just you remember how long they last, and those tiny flowers don't last very long. I say [very confidentially], do you like bread-and-butter pudding? ["Not much."] I'll tell you what I like, and I am sure you will too, and that's suet-pudding smoking hot with raisins in it [a long outpour on puddings followed].

E. A rose. It has a lot of sort of little things inside, petals, red and yellow, cream-colored and white.

F. A white rose. I like them because I think them prettier than any other flower. I don't know what it is like. I can't tell you.

2. What is the most beautiful thing you ever saw?

A. Don't know [thought hard, still didn't know. "Have you seen any beautiful thing lately?" Yes, the sea, when it is calm, and sometimes when it's rough.

B. Roses.

C. Stuffed animals and things.

D [thought a long time, then asked] An animal? ["Just as you think, any thing."] Well, then, I think an air-ball; how difficult they must be to make! [Too rapid a description followed to be taken down.]

E. I like the mountains very much. ["Have you ever seen any?" Oh! I've been to Italy and France and Paris. I was very little, but I remember the mountains.

F. I don't know. [He thought hard, and then said, almost as if watching them] Fireworks, sky-rockets, lovely!

BOOK-REVIEWS.

Grundzüge der physiologischen Psychologie. Von WILHELM WUNDT. 2 vols. 3d ed. Leipzig, Engelmann. 8°.

PROFESSOR WUNDT of the University of Leipzig has indelibly associated his name with the development of the scientific study of