

MISTAKEN NOTIONS OF SCIENTIFIC PHENOMENA AS THEY NOW EXIST AMONG AVERAGE CITIZENS

CLARENCE BONNELL, HARRISBURG TOWNSHIP HIGH
SCHOOL, HARRISBURG

This is the result of an investigation whose purpose was to learn something as to the prevalence of false ideas concerning common, every day phenomena. It was believed that high school students, especially freshmen, would reflect the beliefs held in their homes and among their grown up associates. It may be assumed that the more modern training of these students, coming from the upper stratum of society, as a rule, has made them more intelligent than the average citizen concerning such phenomena as are here discussed, so that the result of the inquiry does not exaggerate the condition.

Ten statements were sent to fifty high schools in northern and southern Illinois, southern Indiana, and western Kentucky and Tennessee with the request that they be read to students without previous discussion or warning. It was suggested that students indicate by a show of hands whether they considered the statements true or untrue. The list was not sent to schools in Chicago or other very large cities because the topics dealt with matters some of which are not heard of by children of the large cities.

Returns were received from thirty-five groups of students, numbering in all fifteen hundred eighty-one children representing twenty-nine schools. A few schools made records from second, third or fourth year students instead of, or in addition to, freshmen, which reduced the relative number of affirmative answers. All answers are tabulated below:

Statement to Be Considered.	Number believing it true.	Number in doubt.	Percent believing it true.
1. There is a reptile called a hoop snake which takes its tail in its mouth and rolls like a hoop.	653	243	41.3
2. The growth of vegetables is influenced by the "time of the moon" when the seeds are planted	377	193	23.2
3. A man has one more rib than a woman since one of Adam's ribs was removed in creating Eve.	130	250	8.2
4. Hydrophobia may be prevented in one who has been bitten by a mad dog by applying a "mad stone" to the wound.	294	234	19.5
5. The heart beat is caused by the striking of the heart against the chest wall as it swings from side to side after the fashion of the clapper of a bell.	24	119	1.5
6. Warts may be removed by means of charms by some people; that is, some people have the power of causing warts to disappear by performing certain acts or saying certain things over them.	426	137	26.9
7. Malaria may be acquired by drinking water from wells, cisterns or reservoirs that have been contaminated with malaria.	940	199	59.4
8. When a mouse becomes fully grown, it is no longer called a mouse but is called a rat.	94	185	5.9

Statement to Be Considered.	Number believing it true.	Number in doubt.	Percent believing it true.
9. Wheat turns to cheat; that is, a farmer may sow wheat seed that is free from other seeds, and cheat will grow from some of the wheat seeds and appear at the harvest time.	207	417	13.0
10. A horse hair left in a watering trough may develop into a slender worm like animal called a "horse hair snake".	335	170	22.4

Thus it is seen that students answered that the statements were true, in numbers ranging from one and one-half per cent in one case to nearly sixty per cent in another. In addition, it must be remembered that an average of thirteen and a half per cent of them did not know whether the statements were true or untrue.

Replies were from these schools in Illinois:—Harrisburg, Cairo, Thebes, Fairfield, Enfield, Bridgeport, Opdyke, Centralia, Tamaroa, Zeigler, Murphysboro, Cornell, Galena, Oregon, Rochelle, Belvidere, and two from near Chicago that requested that the exact locality be suppressed. Also Sullivan, Corydon, Booneville, Princeton, Mt. Vernon and Spencer, Indiana; Paducah and Franklin, Kentucky; and Shelbyville and Union City, Tennessee, sent replies.

Locality seemed to have little to do with the kind of replies given. The seven northern Illinois schools were stronger in the belief in the moon's influence on vegetable growth, the clapper like beat of the heart, the mouse becoming a rat, and that wheat turns to cheat. The difference was slight on the questions of a woman's extra rib, charming away warts, and the existence of the horse hair snake. The South believed more strongly in the hoop snake and the mad stone and ran a little ahead of the more northern cities in the belief that malaria is caused from drinking water.

The conclusion is that there is yet much patient teaching of common-place biology to be done. When fifty-nine

per cent of high school freshmen, including some from higher classes, do not know that the mosquito is the only transmitter of malaria and when hydrophobia is thought by eighteen per cent of them to be prevented by the so-called "mad-stone", it is a sad commentary on the teaching of biological subjects. Maybe I should say that it emphasizes the want of teaching.