when they were standing; hence of no benefit to them. They were breathing over and over again the cold, impure air found in the lower part of the room.

Second experiment; The upper ventilator was opened and the lower one closed. Result : The mercury in the highest thermometer rose to 74° because the hot air in the furnace rose to the top of the room and passed directly to the chimney opening and escaped. The mercury in the thermometer at the level of the pupils remained stationary, the lower stratum of air not being affected in the least by the hot air from the furnace. There was very little circulation of air in the room; hence it must have been impure.

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Third experiment: The upper ventilator was closed and the lower one opened. Result: The mercury in the highest thermometer *fell*, while that in the thermometer near the floor

steadily *rose*, because the lower stratum of cold air was being; driven out by the descending current of fresh, warm air.

This fact is also worthy of note: Large quantities of warm air cannol be forced into a room by gravity unless there is some opening from the room to allow the air already filling it to escape. It is evident that the lower part of a room cannot be properly warmed unless the cold air near the floor can be removed; and this can be accomplished only by means of openings into the base of a chimney.

Thermometers in most schoolrooms are placed too high on the walls; they do not indicate the temperature of the stratum of air in which the pupils are. At recess time the windows should be thrown open that the air of the room may be entirely changed.— *Fournal of Education*.

## THE RELATION OF SCIENCE TO CULTURE.

**CULTURE** may, we think, be pro-, perly described as that knowledge or training which is essential to, at least, a provisional completeness of human nature. To secure such provisional completeness all the lines of a normal human activity must be more or less occupied, all the permanent faculties and capacities of the normal human intellect must have a certain exercise and development, and so be made channels of happiness and usefulness to the individual. Viewing the matter in this light, we see that while this or that special piece of knowledge may not be necessary to culture, each branch of knowledge and of thought must bring some contribution to it. Culture implies understanding, apprecia-

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tion, and some power of action.  $\cdot$  To have a mind wholly unexercised in some important region or regions of knowledge, and therefore wholly incapable of appreciating what may thence be drawn for the general nourishment of thought and advancement of civilization, is to have a culture so far incomplete ; and an incomplete culture is, according to our present definition, the negation of culture. It may be that in the case of no human being is our idea of culture fully realized; still, for all that, the idea may be a good one. Manifestly, the aim of culture is to give such perfection to human nature as it is capable of-to develope not one set of faculties only, but all faculties; and so far it is correct to

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