

not charged as a whole, like a continuous mass of metal, with its electricity spread upon its outer surface. It is interpenetrated everywhere with the force. It is composed of a myriad of electrified specks, each having its own particular share of the electric force, and each acting as a centre of electrical energy on its own account. The electricity which at any one instant resides in the outer surface of a cloud is, therefore, but a comparatively small portion of that which is present in the entire vapourous mass. That such is the way in which electricity is stored in the clouds has been proved by direct observation. When a gold-leaf electrometer is placed in the midst of a cloud driven along by the wind, it is seen that the strips of gold-leaf continually diverge and collapse as the mass of the cloud passes along. There is an electrical charge acting in all parts, but the charge varies in intensity from place to place accordingly as there is a greater or less condensation of the particles of vapour in each particular spot. But the influence externally exerted by the cloud is nevertheless capable of being raised to a very intense degree, because it is, so to speak, the sum total or outcome of the force contained in the innumerable internal centres of energy. It is no uncommon thing for the electrical force emanating from a cloud to make itself felt in attractions and repulsions many miles away. Clouds resting upon the remote horizon thus frequently produce perceptible effects at distances from which the clouds themselves cannot be seen. An electrical cloud hanging a mile above the ground acts inductively upon that ground with considerable power. When in summer time the temperature of the earth's surface is very high, the ground moist, the air calm, and the sky clear, very copious supplies of vapour are steamed up from the ground, under the hot sunshine. Clouds, however, begin at length to gather in elevated regions of the air out of the abundance of the supply. The free electricity which has been carried up with the vapour is at first pretty evenly spread through the clouds; but after a time, as the electrical charge becomes more and

more intense, a powerful repulsive force is in the end established between the spherules of the mist, and a very high degree of tension is at last produced at the outer surface of the cloud, where it is enveloped by insulating air, until in the end the expansive energy there becomes strong enough to occasion an outburst from the cloud. The escape of the redundant charge then appears to an observer's eye as a flash of lightning issuing from the cloud. Such, in its simplest form, is the way in which lightning is kindled in the storm-cloud.—*Science Monthly*.

### CLASS-ROOM.

L. B. DAVIDSON, Head Master Public School,  
Sault Ste. Marie, Editor.

#### COMPOSITION.

##### I. Change into prose:

"Vice is a monster of so frightful mien,  
As, to be hated, needs but to be seen;  
Yet seen too oft, familiar with her face,  
We first endure, then pity, then embrace."

—*Pope*.

##### II. (a) Explain the difference between direct and indirect quotations.

##### (b) Change the form of the following:

(1) "Holloa!" he says, in a loud, cheerful voice. "What! benighted, youngster!"

"O! is it you, Mr. D——?" says the boy; "No, I am not benighted; or, at any rate, I know my way out of the wood."

(2) In there came old Alice the nurse,  
Said, "Who was this that went from thee?"

"It was my cousin," said Lady Clare,  
"To-morrow he weds with me."

—*Tennyson*.

##### III. Compose a sentence, using the following words and phrases:

Study of history, commended, men of thought, examine, learning, such, importance, warmly, since, let us, reasons, giving, assigned, by them.

##### IV. (a) Combine the following elements so as to form a complex sentence:

Harold was king of England. He had a brother. The brother was a rebel. He was in Flanders. He was a vassal of Hardrada. Hardrada was king of Norway.

##### (b) Form a simple sentence from the following elements: