ting the theory of internal heat by some experimental illustrations. Having satisfactorily proved the existence of internal fires, he said the question naturally presented itself—whence is this heat derived? Werner, owing to his limited field for observation and study, referred the changes on the earth's surface, for the most part, to water, and attributed the combustion which produces volcanic action, to the burning of coal fields. But all the coal fields known to be in the world, the Professor said would not supply Mount Etna. Of the sources of this internal heat, however, modern science has informed us. About sixty years since, Galvani made the discovery, of which, doubtless, many of those present had heard. While dissecting a frog—which animal is much used for food on the continent—some one touched it with a metallic substance when it became immediately convulsed, and this led to all the subsequent discoveries in galvanism, which was at first thought to be peculiar to animal life. But in 1800, the construction of the voltaic pile—which the Professor described—showed that such was not the fact, and that it was not restricted to animal life. By taking certain materials from the earth itself, and applying galvanic action, an intense heat is produced. Here then is the secret of central fires. The fact being ascertained that this internal heat exists, it is equally evident, owing to the progress of scientific discovery, in what manner that heat may be generated. The alkalies themselves were regarded as simple bodies until the brilliant researches of Sir Humphrey Davy proved them to be compounds; and who, by means of the voltaic apparatus, made potash to undergo fusion, and from it extracted small metallic globules called potassium. He was equally successful in discovering the metallic base of soda, which forms one-third of common salt, and from which also he extracted sodium.—It is evident, therefore, when we consider the power of galvanism, not only to decompose compound substances, but to generate intense heat, that the earth contains within her bosom agencies which are competent to produce the volcanic phenomena that had been the subject of the three last lectures, and to perpetuate the central fires, of which they are the undoubted evidence.

FORMULA for an ink that resists the action of acids, alkalies, water, or any of these substances usually employed in defacing writing:—Shell lac, 2oz.; borax, 1oz.; distilled or rain water, 18oz. Boil the whole in a closely covered tin vessel, stirring it occasionally with a glass rod until the mixture has become homogeneous: filter when cold: and mix the fluid solution with an ounce of mucilage of gum Arabic prepared by dissolving 1oz. of gum in 2oz. of water, and add pulverized indigo and lampblack *ad libitum*. Boil the whole again in a covered vessel, and stir the fluid frequently to effect the complete solution and admixture of the gum Arabic. Stir it occasionally while it is cooling, and after it has remained undisturbed for two or three hours, that the excess of indigo and lampblack may subside, bottle it for use. The above ink for documentary purposes is invaluable, being, under all ordinary circumstances indestructible. It is also particularly well adapted for the use of the laboratory. Five drops of creosote added to a pint of ordinary ink will effectually prevent its becoming mouldy.

NEW MODE OF PLANTING APPLE TREES.—A horticulturist in Bohemia has a beautiful plantation of the best apple trees, which have neither sprung from seed nor grafting. The plan is, to take shoots from the choicest sorts, insert them in a potato, and plunge them in the ground, having put an inch or two of the shoot while it pushes out roots, and the shoot gradually springs up, and becomes a beautiful tree, bearing the best fruit, without requiring to be grafted.

MISCELLANEOUS.

We take the following humorous lines from a recent number of the *American Magazine*, published in England. They cannot fail to be read with interest in Canada, where happily the system of communication by means of Railroads has been auspiciously commenced.

RHYME OF THE RAIL.

Singing through the forests,
Rattling over ridges,
Shooting under arches,
Rumbling over bridges,
Whizzing through the mountains,
Buzzing o'er the vale,
Bless me! this is pleasant,
Riding on the Rail!
Men of different "stations"
In the eye of Fame.
Here are very quickly
Coming to the same.
High and lowly people,
Birds of every feather,
On a common level
Travelling together!
Gentlemen in shorts,
Looming very tall;
Gentlemen at large,
Talking very small;
Gentlemen in tights,
With a loose-ish mien;
Gentlemen in grey,
Looking rather green.
Asking for the news;
Gentlemen in black,
In a fit of blues;
Gentlemen in claret,
Sober as a vicar;
Gentlemen in Tweed,
Dreadfully in liquor!
Stranger on the right,
Looking very sunny,
Obviously reading
Something rather funny;
Now the smiles are thicker,
Wonder what they mean?
Faith he's got the KNICKERBOCKER Magazine!
Stranger on the left,
Closing up his peepers,
Now he snores amain,
Like the Seven Sleepers;
At his feet a volume
Gives the explanation,
How the man grew stupid
From "Association!"
Ancient maiden lady
Anxiously remarks,
That there must be peril
'Mong so many sparks;
Roguish-looking fellow,
Turning to the stranger,
Says it's his opinion
She is out of danger!
Woman with her baby,
Sitting *vis-a-vis*;
Baby keeps a squalling,
Woman looks at me,
Asks about the distance,
Says it's tiresome talking,
Noises of the cars
Are so very shocking!