

more northerly places; such occurrence invariably indicates a great disturbance of the atmospheric equilibrium; and a heavy fall of the barometer in the north, or a rise in the south, commonly even ensues the very same day, while even on that day, or a day or so later, a gale of wind from the westward begins to blow. When, on the contrary, the south reads four or more millimetres above the north, one ought to be on one's guard. If the reading of the north is above that of the south, and an easterly wind does not then quickly succeed, that rise of the barometer must not be considered as being due to a regular division of pressure of the atmosphere, but only to the temporary abiding of an atmospheric wave, and a strong westerly wind may be expected next day. According to accurate observations, we find that 40 times in 118 a gale of wind will ensue when the south reads higher, and I repeat, therefore, here what was already observed before—a gale of wind is always announced, but with the announcement the gale does not always follow. A danger known before it is really present ceases to be so, or at least loses a good deal of its power; and whether the gale does occur or not, one has been warned, and can be guarded. Science incessantly proceeds, and the day is not, perhaps, very far distant when in this department also very important truths will be brought to light. I ought not to neglect to observe that the gale does not always break out within the first twenty-four hours; the difference in the readings of the barometers is often again the same on the next and even on the third day; but the wind becomes heavier and heavier, and at last a violent gale breaks out. A ship, therefore, having left port on the first day, would not have fallen in with the gale of wind on that day, but only on the next ensuing. The repeated warnings are to be considered as one, which renders the whole more important.—*Chemical News.*

New Method of Engraving.

MM. Delouche and Fellman, an artist and an engraver, have introduced a new method of engraving, which presents many features of interest. They take a plate of polished zinc, which they cover with a coating of whiting analogous to, but not identical with, that employed by wood-engravers; upon this the design is drawn with a peculiar ink. The plate is then suspended in a bath of sulphate of copper from the negative pole of an ordinary galvanic battery, where the inked portions of the drawing become coated with a deposit of copper. When this is considered sufficiently thick, the plate is removed, and having been washed, is suspended from the positive pole of the same battery in a bath of acidulated water. The acid eats into the plate where it is not covered with copper, or the white part of the drawing. A few hours terminate an operation which supplies a plate from which ordinary engravings may be taken in the usual way.

Printing Without Ink.

We learn from the *Typographical Advertiser* that a gentleman, a large capitalist, and one of the most successful inventors of the day, has succeeded in chemically treating the pulp, during the process of manufacturing printing paper, in such a manner

that when the paper is impressed upon the uninked types the chemical particles are crushed, and a perfect black impression is the result. The advantage sought to be obtained is the discarding of ink and rollers; and, by revolutionizing printing machinery, and printing from a continuous roll of paper, it is calculated that time occupied in impressing large quantities of paper will be nominal in comparison to the requirements of the present day. Cleanliness in the printing office would thus become proverbial, and the time now wasted in making and distributing the rollers obviated.

A Receipt for a Deep Black Neutral Ink.

Take 42 ounces of powdered galls, 15 ounces powdered Senegal gum, 18 quarts of distilled or rain water, 18 ounces of green vitriol free from copper, 3 drachms of liquor ammonia, and 24 ounces of spirit of wine; mix these in an open vessel, and allow them to stand, stirring frequently, until the ink attains the desired blackness. This ink will not corrode steel pens.—*Elsner's Chem.-Technische, Mittheilungen*, xi. s. 139.

Numerous Languages.

At the recent annual meeting of the British Association, held at Newcastle, in the north of England, Mr. Crawford, who read a paper on Sir Charles Lyell's "Antiquity of man," challenges the statement that no language lasts as a living tongue, above a thousand years. He said: "As the authentic history of man is not above three times that length, and, as in some quarters of the world, the vicissitudes of language have been unquestionably great, it would, no doubt, be difficult to produce examples of a much longer duration. The Arabic, however, may be cited as a language which has had a somewhat longer duration, for the Koran is good Arabic at the present day, after the lapse of 1,240 years; and when the stationary state of society which belongs to the East, and the peculiar physical geography of the native country of the Arabs are considered, I see no reason why it may not have been of twice, or even of three or four times the duration assigned to language by Sir Charles Lyell. I am told by competent judges that, saving the loss of its dual number and middle voice, modern Greek does not materially differ from ancient; and if such be the case, the Greek language, dating only from the time of Homer (and even then it was a copious tongue), has lasted some 2,600 years. Circumstances peculiar to it, no doubt, contributed to this duration." Mr. Crawford added that "all the languages of the world had been reckoned by some at 4,000 and by others at 6,000; but it was certain the real number was unknown. As a general rule, languages were numerous in proportion as men were barbarous—that is, in proportion as we get nearer to the time when each primordial horde, or tribe, framed its own independent tongue."

Slacking of Quick Lime.

Dr. Davy recently read a paper on the above subject before the British Association. In some experiments which he had made on the slacking of lime—as its conversion into a hydrate is com-