

closed air-tight at the bottom, or the sudden expansion may burst it.

(2.) If a little chlorate of potash be melted in a deflagrating spoon, and plunged into a bottle or flask containing coal-gas, the salt burns with great brilliancy, its oxygen combining with the carbon and hydrogen in the gas, which becomes in this case the *supporter of combustion*.

Power of a Horse's Scent.

There is one perception that a horse possesses to which but little attention has been paid, and that is, the power of scent. With some horses it is acute as with the dog; and for the benefit of those that have to drive at nights, such as physicians and others, this knowledge is invaluable. I never knew it to fail, and I have ridden hundreds of miles on dark nights; and in consideration of this power of scent this is my simple advice; never check your horse at nights, but give him a free head, and you may rest assured that he will never get off the road and will carry you expeditiously and safe. In regard to the power of scent in a horse, I once knew one of a pair that was stolen, and recovered mainly by the track being made out by its mate, and that after he had been absent six or eight hours.

Paper Boats.

In an article last week on the applications of paper, we might have added among its other uses, its substitution for leather, as machinery belting, a patent for which has just been granted, and its peculiar adaptability for the manufacture of shell boats for racing. A boat maker at Troy has lately constructed one thirty feet long, which weighs but forty pounds, and is in every respect superior to boats made of wood. It is thin, lighter than a wooden boat, is rendered impervious to water by a coating of oil and other compounds, and is claimed to be more durable, and that it will stand shocks that would destroy a wooden shell. Such a boat cannot be split or broken, but if a hole be made in it by accident, the perforation will be no larger than the size of the object piercing it, and could be easily mended; it will not swell nor crack, requires no caulking or pitching, and, above all, the cost is much less than a wooden boat.—*Scientific American*.

Utilization of Ozone.

Another advance has been made in the utilization of ozone, as demonstrated by the "ozone-generator" exhibited at the *Conversazione* given by the President of the Royal Society. It is described in *Chamber's Journal* as consisting of a number of flat sheets of glass, coated with tin-foil, and piled one on the other, but slightly separated. Each plate represents a Leyden jar, and when the whole number are electrified, a stream of air forced through from one end to the other becomes so strongly ozonized that breathing it is painful and dangerous. The stream of ozonized air thus produced can be used for bleaching and other chemical purposes; and this is the form of it that is turned to account in the decarbonizing of sugar on a large scale, at one of the refineries in the east of London.

The Electric Telegraph Described 150 Years ago.

The following curious lucubration regarding telegraphy appeared in No. 119 of the *Guardian*, dated London, July 28, 1713:—"One of my predecessors, named Strada, gives an account of a chimerical correspondence between two friends, by the help of a certain loadstone, which had such a virtue in it that if it touched two several needles, when one of the needles so touched began to move, the other, though at never so great a distance, moved at the same time and in the same manner. He tells us that two friends, being each of them possessed of one of these needles, made a kind of dial-plate, inscribing it with the six-and-twenty letters, in the same manner as the hours of the day are marked upon the ordinary dial plate. Then they fix one of the needles on each of these plates, in such a manner that it could move round without impediment, so as to touch any of the letters. Upon their separating from one another into distant countries, they agreed to withdraw themselves punctually into their closets at a certain hour of the day, and to converse with one another by means of this their invention. Accordingly, when they were some hundred miles asunder, each of them shut himself up in his closet at the time appointed, and immediately cast his eyes upon the dial-plate. If he had a mind to write anything to his friend, he directed his needle to every letter that formed the words which he had occasion for, making a little pause at the end of every word or sentence, to avoid confusion. The friend, in the meanwhile, saw his own sympathetic needle moving of itself to every letter which that of his correspondent pointed at. By this means they talked together across a whole continent, and conveyed their thoughts to one another in an instant over cities or mountains, seas or deserts."

Storm Signals during Harvest.

The plan of storm signals during harvest is by means of the telegraph and cannon. The telegraph is to convey the news of a coming storm to each of the county seats, hundreds of miles in advance, in the direction that the storm is travelling. Then at each county seat a cannon is to be fired three times, which will warn farmers throughout the whole country that a storm is approaching in time to get their grain or hay under cover or in a situation to shut out the rain. The plan is by A. Watson, of this city. A telegraph company, by arrangement with the county officials in several of the states, is about to put the plan into practical operation in time for the coming harvest. It is believed that a large portion of the many millions of dollars in grain and hay which are annually damaged by rain during harvest will be saved by the adoption of this simple plan throughout all the state.—*National Intelligencer*.

Co-Operative Companies.

There are now said to be in England between 2,000 and 3,000 shareholders in companies based upon the principle of uniting the interest of the capitalists with that of the workers, and there are at least 8,000 to 10,000 work people employed by these companies.