

instantly, or I give you warning upon the spot—now, be very careful, Charley; don't touch me, don't excite me, don't do anything to make me sneeze and I shall do yet."

Our godfather ate three helps of grouse in total silence, and with the air of the intensest gratitude and appreciation. "You're a good fellow, Charley," cried he, when he had done; "I have enjoyed myself fifty per cent. better than I had expected to do. Do you ever lose your taste when you have a cold?"

"No, sir," replied we, modestly; "but it is very often thrown away upon boiled mutton."

"Good," said my godfather—"very good, as an application; but you are aware that the idea is not original."

And so, as usual at that table, our conversation turned upon anecdotes of eating and drinking.

Then we told him of the secret of the Café Talleyrand, and of the vulgar woman who used to dine by herself in the Salle d'Hellogabalus. The old gentleman laughed till he cried, and then he sneezed for about twenty minutes, after which I thought he would never have done blowing his nose.

"Dope" (he meant "Don't," but his cold was dreadfully increased by the above exertions), "Dope you know who that was? That was Thara, down stairs. That was my coop Thara, Charley. She never could make *Soupe à l'Aigle* nor *Côtelettes de la Licorne* to my taste: and how was she to, poor thing, since she had never tasted them good herself? Tho I thent her to the Café Talleyrand, and bid her order for her dinner whatever things she did not know how to coop. She is as good as any man-coop in England now. That's your secret of the Café. No more clabet, thank you. My taste is quite gone again; and I am thankful to have it when I did."

SCIENCE AND ART.

THE CHANGE OF COLOUR IN LEAVES.—The *Athenæum* says: "Experiment has confirmed the conclusion that leaves turn red, at the end of the season, through the action of an acid, since one of the elements producing the green colour must be a vegetable blue. Autumnal leaves, placed under a receiver, with the vapour of ammonia, in nearly every instance lost the red colour, and renewed their green. In some, such as blackberry and maple, the change was rapid, and could be watched by the eye; while others, particularly certain oaks, turned gradually brown, without showing any appearance of green."

NATURAL HISTORY OF THE NOSE.—The nose, says an observant writer, acts like a custom-house officer to the system. It is highly sensitive as to the odour of the most poisonous substances. It readily detects hemlock, henbane, monkshood, and the plants containing prussic acid; it recognizes the smell of drains, and warns us not to smell of polluted air. The nose is so sensitive that air containing a 500,000th part of bromine vapour will instantly be detected by it; it will recognize the 27,000,000th part of a grain of musk. It tells us in the morning that our bedrooms are impure, and catches the first fragrance of the morning air, and conveys to us the invitation of the flowers to go forth into the fields and inhale their sweet breath.

PAPER WHEELS.—The Pullman Car Company is running a car on the Chicago and North-Western road, with what are called "paper wheels." The wheels have steel tires and cast-iron hubs, and the paper is introduced in the way of filling under the tires, for the purpose of deadening sound and diminishing the force or concussion. According to the *National Car Builder*, the wheels have been running since July last under this particular car, and had been in use some four months previously.

The paper device is said to be superior to wood for the purpose designed, being stronger and lighter, and free from knots, grain, or sap. It does not expand or contract, but remains in the condition in which it is put in the wheels without liability of change. It is cheaper than wood, and can be moulded into any form by pressure, and is made fire and water-proof by asbestos. It is, as a substitute for wood, adapted to a variety of uses, especially in the way of ornamentation.

THE USES OF SALT.—The extent and importance of the uses of salt can scarcely be better described than in the words of Dr. Bolley, which we translate from his work, entitled "Das Kochsalz." "We awake in the morning; the linen which we put on betrays by its whiteness that it has been bleached by the chlorine derived from salt; the shoes with which we cover our feet required salt in the hands of the tanner; in the soap that we use for the toilet we seize a transformed piece of salt; the glass, which we bring to the mouth, hides the chief ingredient of salt; from the crude ore by means of salt, was produced the bright, white metal of the teaspoon, which is so highly esteemed by the world; the teakettle is soldered with borax which holds soda produced from salt; the milk before us contains salt; the butter has been preserved by salt perhaps for months; the bread betrays to the palate that the dough has been mixed with salt. We grasp the paper; it required the application of chlorine from salt in order to please us by its whiteness. The clean spectacles through which we see are partly composed of what once was salt. A visit is announced; a patient wishes to consult us; he enters, and, seeking scientific aid, we reflect upon the remedies at our command, and commence to write. Out of ten medicines we find that five of them owe their origin, either by their composition or the mode of their preparation, to salt. Who is able to forget for one moment this ever-present Proteus that appears in a thousand forms?"

THE LARGEST GUN IN THE WORLD.—The latest born offspring of the art of destruction is a thirty-five ton gun, just completed at the Royal Arsenal, in England. This monstrous creation was made upon the coil principle, with two strips of wrought iron, which, before they were wrapped round the core, were about 150 feet in length. On its way to the practice ground, it crushed its own carriage and the trainway upon which it was travelling, but it was coaxed into moving again, and the sponsors of the interesting infant fired it with half a proof charge, and its own shot weighing 700 lbs., and measuring a foot in diameter and two and a half feet in length. With this load, the monster recoiled nearly nine feet up an inclined trail of seven degrees, but was otherwise unaffected. When it has cut its teeth with larger charges, it is to burn, as a regular dose, 120 lbs. of pebble powder, the shot being the 700-pounder mentioned, with brass studs to fit the rifling of the bore. In firing it, a wire was attached to the vent, the bell was rung, and all present hastened under cover. In one of

the proof houses a gunner in a canvas suit stood before a magnetic battery, and at the word "fire," touched a stud, when there was a loud report, and the gun was seen smoking prodigiously. It will be tested with a charge of 150 lbs. powder, the regular service charge being 120 lbs.

It is the largest piece of ordnance in the world, not excepting those ancient Titans—the Bejapore gun, called the "King of the Plain," the huge stone-ball cannon of the Dardanelles, and "Mons Meg." If an invading enemy will only be kind enough to come near enough to this triumph of belligerent art, we think there might be a chance of slaughter on both sides. But what a telescope might have been made for the money, and what different sort of "victories" might have been obtained with that sort of weapon! The reflection is, we know, ridiculous: "guns, drums, and wounds" absorb the world.

TECHNICAL SCHOOLS.—The *Boston Commercial Bulletin* says: "There is certainly a great want in this country of men thoroughly educated in those branches of practical science with which all manufacturers, but more especially those engaged in the production of textile fabrics, should be familiar. Such men can only be found abroad or among the better classes of immigrants, but they are few in proportion to the requirements of our manufacturing industries; and to the fact that we have less highly skilled talent devoted to the improvement of manufacturing processes may be attributed the disproportion between the capital employed and the results produced in American mills and factories, as compared with those of Europe. In the manufacture of the higher grades of textile fabrics a knowledge of practical chemistry is indispensable to economy, if not to success. Costly and often disastrous experiments have to be made with chemicals and dyes, our waste of material is unnecessarily great, and in proportion to the cost of production, the average quality of our domestic fabrics is far below what it should be. It is believed by many, and with this opinion we heartily concur, that the establishment of technical schools for the scientific education of manufacturers would, in great part, obviate the difficulties now experienced by manufacturers in securing the assistance of experts to conduct these experiments and devote their attention to the improvement and simplification of manufacturing processes. Such a school, or schools, should be modelled on the plan of the great industrial schools of France and Germany, in which the course of instruction embraces weaving, spinning, dyeing, designing, drawing, mathematics, applied chemistry, &c. In such schools tuition should be free, or so nearly free as to be within the reach of all who might choose to avail themselves of the facilities they would offer for practical education. There is reason to hope that the interest now felt in this important movement, by the growers and manufacturers of textile fibres, will lead to the establishment of such a school in one of the great manufacturing centres; and should the experiment prove successful, it is probable that others of similar character will be established in other localities. But in the efforts to secure the dissemination of scientific knowledge, the necessity for the more general practical education of young men should not be overlooked. The revival of the apprenticeship system should everywhere be encouraged, for it is the highly skilled mechanics and artisans who contribute most to the industrial progress of the world, by compassing results which science alone would never reach. In order to make a man thoroughly the master of his trade, he should be taught its theory as well as its practice, and the two might well be combined by offering to apprentices the facilities for obtaining scientific instruction. The movement is certainly a good one, and if undertaken by earnest practical men it deserves and will receive the approval and co-operation of an intelligent community."

THE PENNY—ITS ANTIQUITY.—The penny is a coin of vast antiquity. Its familiar copper shape, as may be generally known, is a comparatively modern alteration of the silver form in which it was known to our forefathers. In the curious, though whimsical little work called "An Essay on the Roman Denarius and English Silver Penny," it is shown to be derived from the Greek *drachma*, *Aegina*, which has been to a date of six hundred years, antecedent to the Christian era. The *drachma* was afterwards coined, not only in Greece, but in Sicily, Syria, and Persia. The same coin under the name of *denarius*, was struck by the high consular families during the Roman Republic, and by the emperors. The author of the work just quoted states that it must have been a denarius of Tiberius to which Christ drew the attention of the Jews when answering their questions as to the lawfulness of paying tribute. He also mentions a very interesting circumstance respecting the Aureus, or larger gold coin of the Roman emperors—namely, that in 685, under Justinian II., one was struck with a head of Christ, giving him the usual placid countenance, with a full round forehead, and ringlets hanging down each side of the face, and beard parted below in the middle. From Rome the denarius was transferred to Saxon England in 650, being there coined by the Kings of Kent, Mercia, and the other departments of the Heptarchy. Under the name of penny, and comparatively rudely executed, it was kept up by the Saxon, Danish and Norman dynasties, in succession, and was the chief coin in circulation down to the reign of John. David I. is the first King of Scotland that is known to have issued the penny. In that kingdom it continued to be coined till the reign of James IV. In the course of its existence from Roman times to the present, the penny has been gradually reduced much in bulk. In the day of the republic, it weighed two pennyweights thirteen grains. In the reign of the Emperor Trajan, it weighed barely two pennyweights two grains. The late emperors reduced it nearly one-half; and the earliest Saxon specimens weigh less than a pennyweight. The penny of Edward IV. was fifteen grains; that of Henry VIII., ten grains; that of William IV., seven grains.

WOMEN FARMERS.—A correspondent of the Iowa Register, writing from Kossuth county in that state, says: "There are quite a number of women holding homesteads in this county, and although they are not actual farmers, one at least is. My sister, Josephine Winter, took a homestead adjoining mine, three years ago, and has met the requirements of the law by living on it and tilling it. She has 26 acres in cultivation, a neat little house built of pine lumber, two cows and several young cattle. She has taught school three or four months every summer and winter to procure means with which to improve her acres, as she commenced with nothing. But next

summer she says she will devote her entire energies to her farm and dairy. She will plant a grove, a fruit garden, a large garden of vegetables and a good patch of potatoes, doing most of the work with her own hands. The remainder of the field she will rent."

WAR INCIDENTS.

A Frenchman has written a *brochure* dedicated to "William the First, King of Prussia by the 'grace of God,' and Emperor of Germany by the effusion of blood."

Gen. Ducrot, who is accused by Prussia of having broken his parole, and by the capitulation of Paris becomes a second time a prisoner of war, is to have his peculiar position left to the decision of an international court martial.

Several of the Russian physicians have warned their patients not to travel abroad, as already some Russians, including the Ambassador at the Hague, and another diplomatist, have died in consequence of infectious diseases contracted by travelling in railway carriages which had been used for the conveyance of the sick and wounded in the war.

THE IRONY OF HISTORY.—A private letter from Paris brings to our notice a curious case of what is called the "Irony of History." The Great Exhibition of 1851 was supposed to be the inauguration of a period of perpetual peace. A large collection of French wheats was sent to it by order of the National Assembly. After the Exhibition these samples were stored for the benefit of the curious in the galleries of the Conservatoire des Arts et Métiers. The directors of the museum and their families, and the sick and wounded (for whom beds had been prepared in the building) have lived through the latter portion of the siege upon good white bread made out of the samples above mentioned.

Is it not a little singular that M. Gustave Doré's two pictures—that is to say, prints of them—"The Marseillaise" and "The Rhine," especially the latter, should still be conspicuously displayed in the shop windows of Paris. "At the very commencement of the war," said M. Forgues, "I met M. Gustave Doré, and we discussed our chances of success. He was positive we should take the Rhine provinces; and I was equally sure we should not. I will bet," I said, "a complete edition of my works against a complete edition of yours that we do not acquire them." Alas! he lost, and the bet has just been paid. I now possess all M. Doré's works, and I never received anything so valuable with so much regret."

THE GERMAN LOSSES.—According to the *Verlust Listen*, published up to January 1st, 1871, the losses of the North German and Baden armies were:—

	Dead.	Wounded.	Missing.	Total.
Officers....	977	3,050	65	4,092
Soldiers...12,865	61,436	9,768		84,069

Total...13,842 64,486 9,832 88,161

The Bavarian losses announced up to the same date were 1,644 dead, 10,218 wounded, 169 missing, making together 12,031. The Wurtemberg losses were about 1,350 men, so that we receive a grand total of 103,532, inclusive of about 4,500 officers. We need not say that the lists issued up to the date mentioned do not include all the casualties that have happened till then. Few of the December casualties are recorded in them. The ravages caused by sickness, always more numerous than the victims by the sword and the bullet, are not put down at all.

A special correspondent tells the following story of the "ruthlessness" of the Prussian troopers: Whilst the Prussian troops were gradually investing us, these ruthless rough-riders rode into every village when least expected. In one of these a poor old woman was washing what little store of linen was left her. She was very old, and her grey hair sprouted in silver tufts from her golden skin. The young women all had fled, and I fear, as young women will, had taken most of the linen with them. (Why should he be afraid of this deed in the linen and young woman way?) At any rate, she alone was left, and was thus engaged, when up rode some half-a-score of huge dragoons. They halt in front of her; they speak their barbarous tongue. The foremost man dismounts and draws his sword. Poor old woman, she falls upon her knees and raises up her wrinkled hands and shrill treble voice for mercy. It is in vain. Not all those cries, not those silver hairs, not even yet that golden skin, can keep that ruthless man away. Neither age nor ugliness protects her. Raising his sword with one hand he stretches out the other towards her, and grasps—her soap; this he cuts in two, pockets the one half, places the other on the well-wall, and growling out something like "P'rdn m'd'm" from his hairy lips, retires. Poor woman! the shock was too much for her; she lost her temper, and swore at those retreating Teutons for being—thieves.

"ALL FOR MONEY."—A Lyons paper gives an apocryphal correspondence, together with England's little account for the sinking of ships and dishonour of her flag. The following is the bill:—

"The Toothless Leopard.
Great Establishment of the British Isles.
Dealers in
Neutralities, Cottons, Conferences, Draperies,
Diplomacy, &c., Wholesale and Retail.
Due by the King of Prussia. The articles
Undermentioned to be paid in cash, without
discount.

1. Seven English merchant ships in the port of Duclair, £20,000 each,.....	£140,000	0	0
2. The cargoes of the same,.....	35,000	0	0
3. Eleven English sailors wounded, at £8,...	88	0	0
4. An English flag torn and trodden under foot, six yards of calico at 1s. 2d per yard,.....	0	7	0

Total, £175,088 7 0

"NOTE.—The great establishment of the British Isles offers to treat upon the same terms with all powers of Europe or elsewhere who may desire to undertake identical operations. The great establishment of the British Isles recommends itself for the facilities which it accords to all who may have any idea of insulting the British flag. To prevent forgeries, demand the special mark of the establishment, "ALL FOR MONEY."