

for morning, and satin and velvet for evening wear. For the former, the yokes, pockets, waistbands, collars, and cuffs are embroidered with conventional flowers; while for the latter, the plastrons, from throat to toes, and the sleeve-slashes, are worked. I have seen white satin plastrons, and the puffs that peep out from slashed sleeves richly embroidered with gold, prepared for dark velvet dresses, and also plastrons worked in a less ambitious manner with Christmas roses intended for silk dresses. But it is impossible to specify every fashion, for the styles are too numerous. All epochs are laid under contribution, and all eras are seen side by side. The historic costumes of the last four or five kings of France fraternise with the fashions of the First Republic, of the Directoire, of the Consulate, and of the two Empires. The course of history is the

course of fashions; but to understand the latter, no attention should be paid to the chronological order of dates.

Among our illustrations will be found a dinner-toilette, a girl's costume, and an out-door dress. The first may be made of brocade and satin, the second of the flannel serge (that has superseded plain serge), combined with silk, and the last with bourrette and silk. In selecting materials and colour, the style of the individual wearer should be studied. It is useless to lay down precise rules on the subject, for one person may wear blues and greens in contrast, make reds and purples near neighbours, and yet produce an *ensemble* that is pleasing and harmonious; while another may keep the unities intact, and at the same time may fail in rendering her dress a success.

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### IN THE ORCHARD.

A TRIO OF TRIOLETS.



THE apples rosy-red!  
 O the gnarled trunks grey and brown,  
 Heavy-branchèd overhead!  
 O the apples rosy-red!  
 O the merry laughter sped,  
 As the fruit is showered down!  
 O the apples rosy-red!  
 O the gnarled trunks grey and brown!  
 O the blushes rosy-red!  
 O the loving autumn breeze!  
 O the words so softly said!  
 O the blushes rosy-red!

While old doubts and fears lie dead,  
 Buried 'neath the apple-trees!  
 O the blushes rosy-red!  
 O the loving autumn breeze!  
 O the years so swiftly fled!  
 O twin hearts that beat as one,  
 With a love time-strengthenèd!  
 O the years so swiftly fled!  
 O the apples rosy-red  
 That still ripen in the sun!  
 O the years so swiftly fled!  
 O twin hearts that beat as one!

G. WEATHERLY.

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## THE GATHERER.

### Photographs on Silk.

It is stated that a firm of silk manufacturers in Lyons have succeeded in obtaining photographs upon silk. Ever since the discovery of that wonderful art, efforts have many times and oft been made to secure the result that has been at length realised. Under the circumstances, it can scarcely cause surprise that the process has not been divulged, though there is ground to believe that the prints are made with salts of silver. Several pieces of silk have been exhibited with a variety of photographic pictures printed on them, some being large medallions of paintings by the old masters. If the Lyons firm succeed in establishing a new industry, surely no one will grudge them that meed of praise to which indeed, whatever may be the final outcome of their invention, they are already entitled.

### Swimming for Girls.

We are glad to learn that a vigorous effort is being made to institute classes for teaching girls to swim. It is possible that proprietors of baths might be willing

to give up the use of their establishments for two or three hours a day for this purpose. There is no reason why such a movement should not have been organised long ago. Women and girls are just as likely to be proficient swimmers as men and boys, and quite as capable of enjoying the healthful exercise. The gentler sex, too, are probably placed as often in circumstances of danger as the sterner, without possessing the same means of combating disaster, as the records of river and sea-side accidents bear only too ample and melancholy witness. Mr. John Macgregor ("Rob Roy") has advocated the cause of the girls, and we trust that his appeal may meet with the success it so well deserves. Already, he says, "hundreds of girls in London are learning to swim, but many hundreds more would gladly learn if teachers could be had;" and he instances a class of thirty whose instruction began late last season, of whom twenty-five learned to swim in six lessons, and six won prizes. As illustrative of our remarks, we may mention the case of the ill-fated *Loch Ard*, which, when within one day's sail of its destination (one of the



largest ports of Australia), struck upon a rock and went down with all souls on board, except two—a midshipman and a girl—who were enabled to swim ashore, and thus saved their lives.

#### Effect of Gas upon Cotton.

An inquiry which ought to be interesting to the merchants of Cottonopolis, London, and elsewhere, has recently been conducted by Dr. W. Wallace, of Glasgow, into the effect of gas upon cotton goods. He finds that in those cases where the gas consumed in warehouses was derived from common coal containing much sulphur, the colour of cotton stuffs has been affected, while the fabric itself, in some instances, has been rendered so tender as to be useless. Sulphuric acid has been found in considerable quantities in goods, after being some time exposed, which were perfectly fresh and free from acid when they first were stocked. The best remedies, according to Dr. Wallace, are the thorough ventilation of warehouses, so that the sulphurous vapours generated by the combustion of the gas may be carried off; and he also suggests the white-washing of the walls with lime, in order that the acid floating in the more or less confined air might combine with it.

#### Whaling.

According to American authorities, the whaling industry is on the decline. Their take in oil and bone amounted in 1876 to about £550,000, which is the lowest since 1829, and only one-fourth of that for 1854. In 1845, 731 vessels with an aggregate tonnage of 233,149 tons were employed in the trade, while in 1876 only 172 ships with a total tonnage of 37,828 tons were so engaged. The main causes assigned for the decline are the opening up of the Pennsylvania coal-oil resources (which have induced the Government to use that material for lighthouses in preference to sperm-oil), the increased difficulty of capture due to the growing shyness of the animals (which renders the length of the voyage out of proportion to the quantity of oil obtained), and the greater cost of fitting out vessels, and the obstacles in the way of procuring efficient crews.

With regard, however, to British whaling, no such dismal news reaches us from Dundee or Peterhead; and it is extremely probable that the huge cetaceans must become much more retiring before our "fishers" will give up the arduous chase. By-the-by, if these leviathans of the deep would only retreat in the direction of the North Pole, might not the great Arctic mystery be solved in the ordinary way of business?

#### An International Exhibition at Melbourne.

Among our colonies and dependencies now exhibiting at the Paris Exhibition, Australia and New Zealand come well to the fore, and it is with much pleasure we hear that, in opening the Victoria Parliament at Melbourne, the Governor has definitely announced that an International Exhibition will be held there in 1880. An admirable situation, too, has been

chosen for it in the Carlton Gardens, and there is every reason to hope that the scheme will be successful. As the colonies have made such a rare show at Paris, there is naturally great anxiety to trade with such important communications, and though Melbourne is a long way off, Australia is a capital market for many kinds of manufacture and produce. Some time ago, at the Philadelphia Exhibition, the Americans were much astounded by the vigour and originality displayed by our colonies and dependencies, and these fresh efforts at Paris will doubtless tell much in the favour of the Melbourne Exhibition.

The Victoria Government, we are told, intend to spare neither trouble nor expense, and we hope they may receive every encouragement and assistance from the old mother country.

#### A New Use for the Salt River.

Though salt is generally used in small quantities, the use is so constant and general that, as may be well understood, a large quantity is consumed merely for seasoning our food. As it is an article of such importance, we cannot but feel glad to hear of any new efforts being made by which we may obtain a commodity valuable in every way. As is well known, salt is obtained either by mining operations or through a process of evaporation. The water of the ocean contains our most ample store of salt, but not our richest; and another objection to it is, that in this country, the sun not being sufficiently powerful, we are compelled to have recourse to artificial evaporation. We learn with much pleasure that a practicable scheme is now arranged for utilising the salt running to waste in the waters of the Great Salt River, in the Arizona territory. The stream is two or three feet deep and about ten times that width; but for upwards of fifty miles these swiftly-running waters are excessively salt. A proposal has been made to extract the salt by evaporation, and the heat of the summer sun in that part of the continent is such, that every facility is given for carrying the plan into effect without being driven to the expense of artificial evaporation. The water would be carried by channels into large shallow basins, the bottom being very smooth and formed of clay, to allow as large a surface as possible for evaporation. Traces can be seen in the neighbourhood of former works, and it is more than probable that, as the salt is of a high quality, superior to the ordinary rock or bay salt, men of former generations knew of its value. The stream, we may mention, is not salt throughout its entire length, and this points to the fact that probably there are large deposits of the mineral to be found there.

#### Life-Preservers on Sea and Land.

The deplorable disasters to the *Eurydice*, *Grosser Kurfürst*, and *Princess Alice* have again directed attention to the all-important question of devising some adequate means for saving life at sea and on large navigable rivers. Ships are equipped with small boats and a number of life-buoys; but the former are often too few, and the latter are often not



readily accessible. It happens, too, that a catastrophe may take place with such appalling suddenness that neither boats nor life-belts—even in those cases where they are properly attended to and kept at hand for any emergency—can be made available. What, then, can be done in circumstances where every moment of time is precious to preserve a ship's crew from a



watery grave? The Journal of the admirable National Life-boat Institution proposes to make the sailors' hammocks serviceable for the purpose indicated. Every seaman is provided with one; they are therefore indispensable, and would occupy no extra space for stowage. Their number being so large, there would be one for nearly every person on board. Being

kept on the upper deck in the hammock nettings along the gun-wales, they would always be in the best position for instantaneous use. There are at least two ways in which the hammocks could be made sufficiently buoyant. In the first place, the mattresses might be filled with cork shavings or granulated cork—as was suggested so far back as 1855; and in the second place, every hammock might be provided with a water-proof sheet, which, by being rolled tightly round the mattress and bedding before the hammock was lashed

up, would, for some time after immersion, prevent the water from saturating the mattress and blankets, and thus preserve their buoyancy. We confess that the former mode would appear to have the greater advantage; but that the waterproof sheet must be well adapted for the object in view, the recommendation of the *Life-boat Journal* amply proves. The most effectual mode of using the hammock is to bend it until the two ends are within 18 inches of meeting, and then to securely fasten the clews together.

On a catastrophe occurring, each man would take a hammock from the netting where it was stowed, and bending it *backwards*, so as to tighten the lashing, would secure the ends by the clews and lanyards, and jumping overboard with it under his arms, he would be able to swim clear of the ship and to support himself until help arrived. Our engravings represent

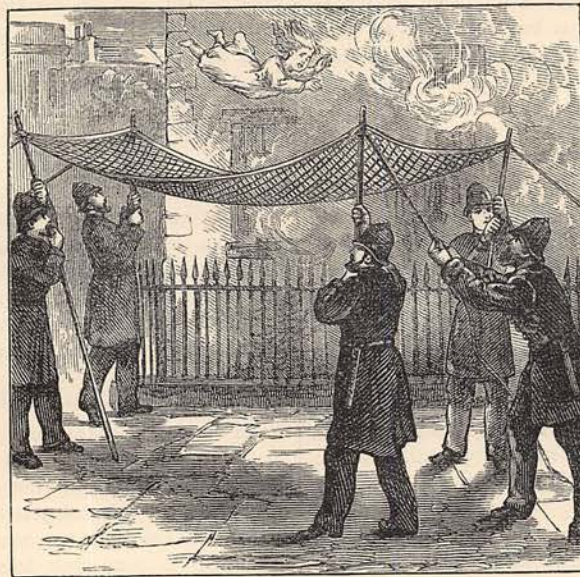


the hammocks in action, so to speak: in one case, a sailor uses a single hammock; in the other, by fastening a couple of hammocks together, two seamen are enabled to swim off in company. It must be noted that the hammock life-preservers have been proposed

for men-of-war or merchant ships only. In the case of passenger vessels, where the passengers slept in berths, it would be necessary to have in each cabin, or at a special part of the upper deck, a certain number of buoyant hammocks ready prepared for use.

Passing from the consideration of what must be regarded as a very simple and effectual device for saving life at sea, let us briefly describe an equally simple contrivance for saving life from fire.

Many fires take place in houses, which, from a variety of



causes—such as age, the inflammable nature of the materials of which they are built, and the like—are often burnt to the ground before any effectual means can be obtained for the rescue of the inmates. In some cases irreparable loss has been done before a fire-escape has had time to arrive on the scene, and occasionally even the fire-escape has not been sufficient to save life. We illustrate an escape, of English invention, whereby persons who are compelled to precipitate themselves from burning houses may be



caught before reaching the ground. It consists of a net sustained on poles, held up by bystanders, which serves the same purpose as the precautionary net which is stretched beneath trapeze performers in circuses. Contrivances of this kind might be kept at police stations for instant use on an alarm of fire, and as they could be carried to the spot with the utmost promptitude, might be the means of saving many lives. Of course it is not for a single moment pretended that they might supersede the ordinary fire-escape, but that they would in certain cases be found most valuable adjuncts to it.

#### A Remedy for Mildew.

At this season of the year, when our orchards and gardens are so liable to be attacked by mildew, a good remedy for it is well worth knowing. Mildew is commonly supposed to be the result of wet or damp weather, but in reality it is caused by a peculiar kind of fungus, which attacks our vegetable world, generally at the close of summer, when the leaves have in a great measure lost their vitality. The remedy we speak of is a very simple one. Take a few pieces of fresh lime, and having piled them together, slake them steadily. When you have reduced the lime to a powder, put it into a muslin bag and sprinkle it over all the branches and parts of the tree where any sign of mildew is visible. On the next day the lime must be washed off with tepid water, but if there is any sign of mildew remaining, the process must be continued till it is completely gone. This remedy will be found most effectual, and it is only in very exceptional cases that any further appearance of mildew will show itself.

#### The Great Chinese Encyclopædia.

The Chinese Library at the British Museum has within the last few weeks received a very valuable addition, in the shape of the Great Chinese Encyclopædia. This work, which consists of over 5,000 volumes, contains the whole of the Chinese literature of any importance from the year 1000 B.C. to 1700 A.D. The task of arranging the work was commenced in the reign of the Emperor Kang-he, under his own supervision; but his death taking place before the work had been finished, his nephew and successor undertook the completion of it, writing with his own hand a very able preface. Mr. Mayer, our Secretary of Legation at Peking, had, we understand, great difficulty in obtaining possession of the volumes, having to keep it a profound secret even from the vendor himself, that the work was being sold to a foreigner. The price of the work complete was £1,500. This at first sight seems a large sum, but when we come to consider that the work consists of over 5,000 volumes, and that great value is attached to them, we cannot call it a dear bargain. A fact which adds still more to the value of the purchase is, that when a hundred copies of the work had been printed, the type was broken up and destroyed; and as we understand that this is probably the only complete copy in existence, we cannot but look upon the work as a very valuable acquisition.

#### Street Mud.

Belgium, like China, has too many mouths to feed to allow of her neglecting any honest means of turning a penny by husbanding the resources of a small and densely peopled country. M. Petermann, the director of the Government Agricultural School at Gembloux, has been trying, not unsuccessfully, to make the best of what most of us regard as an unmitigated annoyance—the slimy, tenacious mud that besmeared the pavement of our crowded thoroughfares. Ten tons of this uninviting product being duly transported to the State model farm, and distributed in fifty heaps on the turf of the biggest meadow, the official's next care was to subtract a pound of mud from each heap, to mix, dry, and sift the samples. Having thus, as it were, shuffled his cards, and insured perfect fairness of treatment for his fifty pounds of representative mud, M. Petermann next took out his blowpipe and cupels, his assay tubes, and case of reagents, and proceeded to subject the raw material to a strict and searching analysis. Street mud, it is evident by the result of M. Petermann's examination, would be worth having on a farm, if only the farmer lived near enough to a great town, or the cost of railway or canal transit were sufficiently low to admit of its being cheaply put upon the land. There was water, but not much—only forty-two parts in the thousand. Lime there was, and a little potash, and almost exactly the same amount of soda, and, oddly enough, as much magnesia as the soda and potash together. Oxide of iron there was, combined with alumina, and there were four acids—the carbonic, the chloric, the sulphuric, and the phosphoric. There were 640 parts of useless, inert, insoluble bulk—mere sand, gravel, flint, and clay. There were 228 parts of organic matter, and for the sake of these fertilising agents it was considered worth the cost of transferring the scrapings of the town pavement to the pasture and arable of the model farm at Gembloux—poor and hungry land, it may be remarked, but which yet repays the care and skill that have been expended on its cultivation.

#### A Self-Acting Rifle Marker.

An invention has been produced which, if successful upon a thorough trial, will probably render the services of the marker at rifle ranges altogether unnecessary. The targets are electrically connected with miniature representations at the firing-point. The latter are divided into four sections by two lines crossing each other at right angles in the middle of a number of concentric rings. Every ring has a small hole in it, in each of the four sections, and when a bullet strikes the target a number appears in the corresponding disc at the firing-point. In the event of a shot being lodged on the line where two rings on the target are in contiguity, such a shot can be indicated by the display of a number in both rings on the home-dial. To all intents and purposes, therefore, the bullet is in this arrangement its own marker, but whether the ingenious device is likely to be of permanent value has yet to be seen.



**Double Acrostic.**

An aged poet, whose sweet graceful rhymes  
Are known to dwellers in far-distant climes,  
Whilst this bright poem adds undying fame  
And lustre to the honoured poet's name.

We crossed *this* on a broiling summer day,  
Thermometer at ninety in the shade ;  
While "Neptune" and his swarthy sailor band  
Their games and revels with much vigour played.

A town in the province of Tver,  
It is true quite unknown to fame ;  
Yet I think I may safely infer,  
You will quickly discover its name.

We all know this place ; 'tis the capital town  
Of a British possession of great renown.

Life is a tangled skein with many a knot,  
Which cut like this one will be soon forgot.

I tried to magnify myself too much,  
I failed—but, oh ! that's not the worst ;  
Not only did my bubble quickly break,  
But I myself, too much inflated, burst.

I once approached the glorious realms of light,  
But soon again was plunged to thickest night.

In all that appertains to love,  
To country or to Queen,  
Old England boasts that *this*, in truth,  
Her sons have ever been.

"Arabs" of Italian cities,  
Thoughtless scamps are we,  
Roving, restless, oft abandoned,  
Yet we're gay and free.

Revenge upon his fairy wife he sought,  
And by a flower's charm his purpose wrought.

Though weary oft she ever smiles,  
Herself forgets, all care beguiles ;  
Her face is calm, her eye is bright,  
She fills the home with life and light.

**French Government Aquariums.**

These are five in number, two of which, at Arcachon and at Havre, are aquariums pure and simple, while the others aspire to the dignity of Marine Laboratories, and depend for their existence, wholly or partially, on the bounty of the State. The State gives very little. The station of Roscoff, which, in spite of its Russian-sounding name, is on the coast of Provence, and which is superintended by a professor of the Sorbonne, costs the French Government but £200 a year. This not very munificent gift is somehow made to provide not only the professor's salary, the rent of a house, the wages of a sailor who manages the boats and dragnets, but also the travelling expenses of the eager pupils who come from all parts of France to take their turn in studying the lesser wonders of the deep. Concarneau, in Brittany, is kept up at a yet cheaper rate ; and the smallest dole goes to Wimereux, near Boulogne.

The aquarium—or, as its hard-working director-in-chief delights to call it, the Maritime Laboratory of Wimereux—is the newest and the poorest, but perhaps the most interesting establishment of its kind. Its headquarters are in what we should style a cottage, and the French a *châlet*, on the shore of a sandy creek, at the silted-up mouth of a puny rivulet—the Wimereux—where once Napoleon massed his flotilla of flat-bottomed boats for the invasion of England. On one side is a big brackish pool, neither fresh nor salt ; on the other, the sea ; while full in front rise the weed-grown walls of a wave-washed fort—the Tower of Croy—standing on a clump of rocks, and converted twice a day into an islet by the flood-tide. In this very uninviting nook a band of ardent young naturalists, headed by their professor, M. Giard, have chosen to encamp themselves. It needs a real devotion to science to nerve educated men to confront the hardships of a studious life at such a place as Wimereux. Pupils and teacher are quartered, in gipsy fashion, within the narrow limits of a mere bathing-box, the available space of which is necessarily taken up by tanks, tubs, and glass cases full of zoophytes and minor monsters of the sea. The students perform almost the whole of the house-work, personally collect the molluscs and crustacea on which the principal is to lecture, and cheerfully trudge across five hundred yards of wet sand to fetch the daily supply of salt water that must fill the tanks. Their chief hunting-grounds are the rocks at the foot of the old Tour de Croy, where marine animals take refuge in crannies among the stones, while the brackish pool above-mentioned yields a store of creatures only to be found where fresh water, as at Wimereux, mingles with the salt. It was with no small trouble that M. Giard, who is a Lille professor, persuaded the Council-General of the Département du Nord to help in the purchase of a few books and some apparatus such as a lecturer wants, while the dole received from the State is almost ludicrously trifling. All, however, who are interested in the progress of this important department of scientific investigation, will be glad to hear that the institution thrives, is never in want of pupils, many of whom have taken University degrees, and promises to do good work in its own branch of natural history.

**A Pillar-Box Indicator.**

If the postal letter-boxes were improved when they received their coats of brilliant scarlet, perhaps the following simple appliance which has been devised for them may be considered as a still more useful and practical though less gaudy improvement. The door of the box is made to shut with a spring, and in so closing, a plate is disclosed showing the hour of the last clearance. By this contrivance intending depositors may learn at a glance whether the box has been cleared for any particular delivery. The Post Office have also a check upon their employés, for if a box were left uncleared, as is sometimes the case in outlying districts, the tell-tale indicator would at once declare the neglect. If the mechanism could be made



to discover two plates, the one mentioning the *last*, and the other the *next* clearance, the usefulness of the indicator would be increased. The appliance is said to have been successfully tested in Liverpool.

#### Ormer Gathering.

The ormer is a succulent shell-fish of the limpet species, which is plentifully found in Guernsey, Sark, and two or three other islands of the Channel group, but scarcely anywhere else in English possessions.

It must, therefore, be taken more or less by surprise; and the skill of the gatherers is shown by the dexterity with which they introduce the point of a long knife and turn the fish over before it has time to exhaust the air between itself and the rock, and thus obtain, by the laws of atmospheric pressure, an adhesive power of about 230 pounds. As an article of food, the ormer is generally pronounced to be both wholesome and savoury. Two hundred years ago a gentleman of Sark, in a letter to a London kinsman, described it as



GATHERING ORMERS.

Being a deep-water fish, it can only be gathered or "harvested," as the local phrase is, at the lowest tides of the year. As the waves recede below the usual line, the coast becomes alive with a throng of busy workers of all ages and both sexes—the little towns, like that in Keats's poem, being for the nonce literally "emptied of their folk." The ormer is found fastened to the rocks; and its oval univalve shell, which averages five inches in length, being brown in colour and embedded in sea-weed, easily escapes the observation of unpractised eyes. Nature has given to many living things a marvellous power of self-protection; and the ormer can attach itself to the rock with a firmness that almost defies the gleaner's sickle.

"a shell-fish much bigger than an oyster, and infinitely more pleasant to the gusto, so that an epicure would think his palate in Paradise if he might but always gormandise on such delicious ambrosia." A less appreciative partaker of it to-day would probably say that, fried or stewed, it makes an excellent dish, rather resembling a veal cutlet, with perhaps an added suspicion of brine. Before cooking, it requires to be beaten, or it will turn out violently tough; and it is generally served up with bacon. Being a univalve, with one side exposed to the air, the ormer will not keep; otherwise, in these days of oyster famines, it would certainly have formed, all over England, a welcome addition to our supper-tables.

