

cure some minute crystals, which he submitted to an eminent jeweller, who tested them by the microscope and other means, and decided that they had the true fire, water, and hardness of the diamond. Moreover, on being subjected to the blowpipe they, like that gem, left no ash. Although he discontinued his experiments, he concludes his memoir with the following words:—"I believe that I can now announce that the greatest step is made towards the solution of the problem of making diamonds, in all respects similar to those nature has disseminated in India and Brazil. The complement of that discovery will do honour to modern chemistry."—*Galignani*.

HOW TO MAKE A PHONOGRAPH.—In the *Scientific American* appears a short description of a very simple phonograph. It consists of a mouthpiece similar to that used for a telephone, but on the under surface it has the phonographic style or needle fixed to it. Fastened on to this mouthpiece is a circular rim of wood, with two grooves opposite to each other cut in it; a piece of wood with a groove along its length accurately fits these grooves, and, when a piece of stout tinfoil is attached by bees'-wax on the surface next the needle, the wood and foil being drawn slowly along whilst a person is speaking into the mouthpiece, the usual phonographic impressions are made on the foil. In this way a very simple and inexpensive phonograph may be made.

AGRI-HORTICULTURAL DEPARTMENT.

PAPER FIBRE FROM WOODS AND PLANTS.

According to the experience of the paper manufacturers, De Naeyer & Co., of Belgium, different sources of paper fibre furnish the following percentages:

WOODS.		
Common Names.	Scientific Names.	Yield Per Cent.
Heath.....	<i>Erica vulgaris</i>	27.14
Filbert trees.....	<i>Corylus avellana</i>	31.50
Alder.....	<i>Alnus glutinosa</i>	34.30
Bamboo.....	<i>Bambusa thonarsu</i>	34.82
White pine.....	<i>Abies pectinata</i>	34.60
Horse chestnut.....	<i>Aesculus hippocastanus</i>	38.26
Oak.....	<i>Quercus robur</i>	29.16
White poplar.....	<i>Populus alba</i>	35.81
Red pine.....	<i>Pinus sylvestris rubra</i>	32.28
Elm.....	<i>Ulmus campestris</i>	31.81
Ash.....	<i>Fraxinus excelsior</i>	32.28
Black alder.....	<i>Rhamnus frangula</i>	37.82
Fir.....	<i>Pinus sylvestris</i>	35.17
Osier.....	<i>Salix alba</i>	29.50
Canadian poplar.....	<i>Populus Canadensis</i>	36.88
Beech.....	<i>Fagus sylvatica</i>	30.90
Pitch pine.....	<i>Pinus Australis</i>	31.98
Walnut.....	<i>Juglans regia</i>	26.52
Willow.....	<i>Salix alba</i>	37.82
Birch.....	<i>Betula alba</i>	33.80
Italian poplar.....	<i>Populus Italica</i>	36.12
Acacia.....	<i>Robina pseudoacacia</i>	34.10
Lime tree.....	<i>Tillia Europea</i>	38.16
Rattan.....	<i>Calamus verus</i>	29.19
Aspen tree.....	<i>Populus tremula</i>	35.00
HERBACEOUS PLANTS.		
Camelina.....	<i>Camelina sativa</i>	29.16
Bent grass.....	<i>Agrostis spica venti</i>	45.82
Buckwheat.....	<i>Fagopyrum esculentum</i>	30.60
Marsh rush.....	<i>Scirpus palustris</i>	41.70
Banana.....	<i>Musa ensete</i>	31.81
Mateva.....	<i>Hyphene Thebaica</i>	26.08
Oats.....	<i>Avena sativa</i>	35.08
New Zealand flax.....	<i>Phormium tenax</i>	32.71
Asparagus stalks.....	<i>Asparagus officinalis</i>	32.56
Marsh grass.....	<i>Glyceria aquatica</i>	38.80
Maize.....	<i>Zea mais</i>	40.24
Reed.....	<i>Phragmites vulgaris</i>	41.57
Canna.....	<i>Canna</i>	20.29
Rye.....	<i>Secale cereale</i>	44.12
Giant nettle.....	<i>Urtica dioica</i>	21.66
Sugar cane.....	<i>Saccharum officinarum</i>	29.15
Barley.....	<i>Hordeum vulgare</i>	36.21
Sedge.....	<i>Carex</i>	33.86
Wheat.....	<i>Triticum sativum</i>	43.14
Fromenteau.....	<i>Baldengera Arundinacia</i>	46.17
Blue flag.....	<i>Enodium cœruleum</i>	40.07
Hop.....	<i>Humulus lupulus</i>	34.84
Canary grass.....	<i>Phalaris Canariensis</i>	44.16
Wild broom.....	<i>Spartium scoparium</i>	32.43
Dog's grass.....	<i>Triticum repens</i>	28.38

The fibre of a variety of the aloe, peculiar to the Mauritius, is reported to be the best known material for ropes. It is said to be very pliant, to exceed in toughness an iron wire of the same size, and to be impervious to the effects of salt water.

NEW LIFE FOR OLD PEAR TREES.—That the pear is a long-lived tree is shown by cases of the famous Endicott and Stuyvesant trees in New York, as well as several pear trees on the island of Montreal of over 100 years of age. Experiments show that many of the mossy and fruitless trees, when over thirty or forty years of age and apparently worthless, may be given new life and vigour and made productive again, by stirring the soil around them as far as the roots extend, and watering them liberally, cutting out the dead wood and

grafting a new top. Three seasons may be taken in which to put on a new top. Pruning the top limbs the first year, and wetting down wood-ashes, is one of the best fertilizers. Old bones well buried are good, and the contents of cess-pools and privy vaults exceedingly so. In stirring the soil do not break the roots. A mixture of stovepipe soot, lime, and wood-ashes in proportion of one part of the soot to three parts of the lime and ashes. The above mixed with manure and well dug into the roots, will restore decaying pear trees, and give great vigour and increase of fruit. This mixture was tried upon a "Bon Chretien" of 74 years growth, with great success. The more the soil is stirred and cultivated around fruit trees the better the crop.

BRIEF NEWS ITEMS.

ENGLISH.

Whilst the painful sensation above alluded to was at its height, a frightful colliery explosion occurred in South Wales, by which nearly 300 lives were lost.

A stroller in Westminster Abbey lately discovered two fine bouquets on Charles Dickens's grave, together with a humbler yet more touching tribute,—a little posy of wild flowers, which bore evidence of long distance and hot, ungloved hands, just what Dickens below would be pleased to have placed on his tomb—perhaps by an unknown "Little Nell."

From a South London paper we clip the following most mysterious advertisement: "Can any lady recommend a thoroughly experienced superior nurse. Lady's first baby. Aged 25. Good wages. Apply, Forest Hill, S.E." A most experienced nurse would indeed be required to look after a baby of twenty-five! One is tempted to speculate whether this old infant is of the male or the female sex.

English papers by last mail are full of details of the sinking of the "Princess Alice" in the river Thames, and including every element of horror, it stands pre-eminent amongst accidental tragedies; at the latest date 581 bodies had been recovered, a subscription list had been opened under the presidency of the Lord Mayor, and £14,000 had been announced in one week; the Queen had sent 100 guineas, and the prince of Wales 50 guineas.

We give this story of an employé at Woolwich Arsenal, who, having hurt his foot by the fall upon it of an iron bar, went to the Arsenal medical officer. This gentleman, it would seem, performs his duty in a very perfunctory manner, and, cutting the man short in his recital as to how he received the injury, and without deigning to look at his foot, packed him off to the dispensary with an order for a bottle of lotion. The man, rather nettled at this cavalier treatment, never went for the lotion. About a week after he was persuaded by his wife to again go and see the doctor, and he did so. "Ah," said the son of Aesculapius, "No. 164. You're going on all right. *Continue the same treatment.*" The joke was that the man had literally done nothing to his foot. Rather hard this upon the doctor!

AMERICAN.

After a Greenback meeting in Maine recently the orator took up a collection, and found \$9.25 in his hat, in pieces of paper inscribed, "This is a quarter," "This is fifty cents," &c

Wisconsin offers a bounty of \$5 for every wolf scalp. Last year the State paid out \$16,000 on its wolf bounty. But the vermin are on the increase, and it is now suspected that some astute patriots are raising wolves for their scalps. *Better try "protection."*

New Haven, Conn., voted on Monday last, by a vote of 4,881 to 1,963, to restore the reading of the Bible in the public schools. The city school-board dispensed with all religious exercises some months ago, which created much dissatisfaction. Monday's vote rebuked their action and restored the Bible-reading.

The wheat crop is still under discussion. The *Rural New Yorker* thinks "we have two hundred million bushels to export, whereas last year we had only half as much, and concludes that, on the whole, the present prospect is that while prices will probably not depreciate much, it is highly improbable that they will permanently rise even a little."

David Whitmer is in possession of the original manuscript of the "Book of Mormon," and Elders Pratt and Smith of the Mormon Church have just been to his home, in Richmond, Mo., to secure the book. They urged that it ought to be deposited for safe keeping in Salt Lake City, and offered to buy it; but Whitmer, who has kept it for nearly half a century refused to give it up.

THE YELLOW FEVER.—The pestilence seems to have spent its fury, although the daily record of deaths is still fearfully large. A general falling off in deaths is reported from all of the afflicted cities. Most generous responses, in aid of the sufferers, are coming in from all the States. In addition to these, contributions are being made from France and Canada. Our Montreal subscription is progressing favourably.

MISCELLANEOUS.

On Sept. 2nd, two Englishmen ascended Mont Blanc without guides.

The English Government has ordered the emancipation of all slaves on the island of Cyprus.

Russia is endeavouring to induce the Powers to remonstrate with the Porte for its slowness in executing the provisions of the treaty.

Since the first May 600,000 portions of the Bible, in twenty-two languages, have been issued from the Bible stands of the French Exposition.

The eruption of Mount Vesuvius is increasing. The base of the new cone is now covered with lava, which is now streaming down the sides of the mountain.

The volcano of Cotopaxi is again in a state of eruption, throwing out immense clouds of smoke and ashes, which can be seen from Guayaquil. The eruption is the most violent that has been known for some years.

UTRUM HORUM MAVIS ACCIPE.—In the *Presbyterian Witness* (Halifax) we read: "The Montreal Sugar Refinery is in operation again." Whilst in the