

40,000 miles. Here were results such as no previous one had attained. I mention it because I think it is right that our own country, which has but just commenced its career in this science, should know what is her due, and I trust the day is not far distant, when we shall become as distinguished for our proficiency, for our learning, for our researches, and for our efforts in behalf of Astronomy, as we have hitherto been for our profound neglect of this sublime science.

**MARRIAGE.**—Man and wife are equally concerned to avoid all offences of each other in the beginning of their conversation; every little thing can blight an infant blossom, and the breath of the South can shake the little rings of the vine when first they begin to curl like the locks of a new weaned boy; but when by age and consolidation they stiffen into the hardness of a stew, and have, by the warm embraces of the sun and the kisses of heaven, brought forth their clusters, they can endure the storms of the North, and the loud noises of a tempest, and yet never be broken; so are the early unions of an untutored marriage; watchful and observant, jealous and busy, inquisitive and careful, and apt to take alarm at every unkind word. After the hearts of the man and wife are enleaved and hardened by a mutual confidence and experience, longer than artificial presence can last, there are a great many remembrances and some things present that dash all unkindnesses in pieces. —[Jeremy Taylor.]

**MARRIAGE AND CRIME.**—The remark has often been made that matrimony is a great preventative of crime. A thousand persons might be adduced to show why this is so, but we merely now wish to state a fact in support of the theory. In the Western Penitentiary of Pennsylvania, there were 130 prisoners. Of these there were—

Married.	16
Unmarried	101
Widows and Widowers	13

When we read statistics like these, we always feel alarmed for our bachelor friends. We are half-tempted to believe that some of them in town will be tempted into the commission of some crime which will send them to State Prison, unless they speedily assume the silken chains of Hy-men.

In the Mexican language a kiss is written thus—*Tennamiquititli*. Think of asking a pretty girl for one.

**HEAT WITHOUT FUEL.**—A Hungarian Chemist has discovered a method of producing heat without fuel. He places in contact two iron plates and a copper cylinder, both polished, turning in an axis at the end of a lever with a balance-weight at the other end to keep the plates in contact, when, by means of a very simple apparatus and trifling exertion, a glowing red heat may be produced in five minutes, and maintained with ease.

**THE ACIDS OF TOBACCO.**—Professor Goupil, of France, has reported to the *seances* a series of experiments on Tobacco. The chief organic acid is the malic. Bimalate of ammonia may be readily obtained from the plant, which in its dry state affords three or four per cent. M. Goupil has discovered that the conversion of the precipitated malate of lead into a crystalline mass does not take place unless there is free acid present. This is an important fact, as the conversion into crystals is commonly assigned to a distinguishing character—Citric acid is found in the tobacco plant, but in a very small quantity. No other organic acids could be found.

**FORMATION OF CAOUTCHOUC FROM DRYING OILS.**—In the forty-sixth volume of the *Archives de Pharmacie*, Paris, M. Jouis has an Essay on this subject. Linseed-oil, boiled for a long time, yields a brownish varnish; this is to be boiled for a long time in water containing nitric acid; the loss by evaporation must be supplied and the acid not allowed to act too violently. At last a substance is obtained which gradually solidifies; this is to be washed, to free it from acid. This substance does not melt by itself and when heated strikingly resembles caoutchouc. It dissolves partly in ether and sulphuret of carbon; entirely in oil of turpentine. Walnut and poppy oils furnish the same body, to which the name of a caoutchouc is given. When linseed oil is boiled with half a pint of sulphur, as soon as the temperature reaches a certain point, the whole is converted into a gelatinous mass, resembling oil-caoutchouc; dilute nitric acid converts all the sulphur into sulphuric acid; the residue has a brick-red color; it, however, is not elastic.

**VOLCANIC PEAK OF THE ISLAND OF FOGO.**—**Cape Verde.** Professor Deville, of the Geological Society of France, has submitted a statement of this place, giving many particulars with reference to the island, and presented to the Society a topographical chart of it. The Peak of Fogo is 2,790 metres (or rather more than 1½ English miles) in height. It stands in the center of a basaltic crater, rising 1,000 metres (a little more than an English half-mile) above its base. The inclosing walls extend entire half-way around, so as to form a semi-circular crest. On the broken side there are numerous scoria cones thrown up at the eruptions of 1755 to 1779, when all that flank of the Island was covered with lava.

**POWER OF ELECTRICITY.**—A salad of mustard or water-cress, may be produced in a few minutes, by the assistance of electricity. The process is to immerse the seed for a few days previously, in dilute oxymuriatic acid, then sow it in a very light soil, letting it be covered with a metallic cover, and then bring it in contact with the electric machine. By the agents employed in this process, eggs which require from twelve to twenty days application of animal heat to hatch them, may be hatched in a few hours. Rain

water apparently free from any noxious animalcula, in an hour may be rendered full of insects.

### Scientific.

#### CATECHISM OF AGRICULTURAL CHEMISTRY AND GEOLOGY.

##### VI.—Of the Manuring of the soil.

(Continued from our last.)

**Q** In what form does the carbon of the food come off from the lungs during breathing?

**A** In the form of carbonic acid gas.

**Q** How much carbon does a man give off in this form from his lungs in a day?

**A** A full grown man gives off about half a pound in a day, a cow or a horse eight or ten times as much.

**Q** Does all the nitrogen of the food remain in the mixed dung and urine of animals?

**A** Yes, nearly all the nitrogen remains—mixed with a smaller quantity of carbon than was in the food.

**Q** Is this larger proportion of nitrogen the cause of the greater activity of the dung of animals?

**A** Yes, it is one of the principal causes.

**Q** What form does this nitrogen assume during the fermentation of animal manures?

**A** It assumes, for the most part, the form of ammonia.

**Q** What is ammonia?

**A** Ammonia is a kind of air which has an exceedingly strong smell—the common hartsorn of the shops is merely water impregnated with this gas.

**Q** Under what circumstances is ammonia produced naturally?

**A** It is produced in fermenting compost or manure heaps, and in fermenting urine, and it is the cause of the smell perceived in hot stables.

**Q** How can you detect the presence of this ammonia?

**A** By dipping a rod or feather in vinegar, and holding it over the dung heap or in the stable when if ammonia is present in the air, white fumes will become visible.

**Q** What does ammonia consist of?

**A** Ammonia consists of two gases, nitrogen and hydrogen.

11 lbs. of nitrogen and 3 lbs. of hydrogen make 17 lbs. of ammonia.

**Q** How does this ammonia enter into the roots of plants, when it is formed in the manure?

**A** It is dissolved in the soil by water, and is then sucked in by the roots.

**Q** What substances are formed in plants by the aid of this ammonia?

**A** The gluten and other substances containing nitrogen are formed by the aid of this ammonia.

**Q** Is this ammonia, then, a very important ingredient in the manures?

**A** Yes, because nitrogen, in some shape or other, is absolutely necessary to the growth of plants.

**Q** In which, part of the manure,—the solid or the liquid part,—is this ammonia produced in greater abundance?

**A** It is produced in the greatest abundance in the liquid part, especially of cow dung.

**Q** Is it not of great importance, therefore, to preserve this liquid part?

**A** Yes, it is of the greatest possible importance, though it is too often allowed to run to waste.

**Q** How would you collect the liquid manure of your farm-yard?

**A** I would make a large tank or cistern in or close by my farm-yard, in which I would collect it.

**Q** How would you use this liquid manure?

**A** I would pump it back occasionally upon my dung heaps, so as to promote their fermentation, or I would pour it upon my compost heaps.

**Q** Would you not employ it alone as a manure?

**A** Yes, during the spring and summer I would dilute it with once or twice its bulk of water, and after it had fermented for some time, I would put it on my grass land, on my young clover, or on any other young crops, with a water cart.

**Q** Is there any other liquid containing ammonia which might be employed in a similar way?

**A** Yes, the ammoniacal liquor of the gas works, diluted with four or five times its bulk of water, should be collected and employed in the same way as the liquid manure of the farm-yard.

**Q** Does birds' dung form a very valuable manure?

**A** Yes, pigeons' dung especially, is a very rich manure; and the dung of sea-fowl has lately been introduced into this country, with great advantage, under the name of guano.

**Q** To what crops can guano be profitably applied?

**A** It may be profitably applied as a top-dressing to the young corn crops, or it may be used instead of the whole or a part of the farm-yard dung, for the turnip and potatoe crops.

**Q** In using it for the turnip or potatoe crop ought it to be allowed to come in contact with the seed?

**A** No, it is better either to cover it, or to mix it with a quantity of earth, so as to prevent the seed from touching it.

**Q** Is it proper to mix guano with quicklime?

**A** No, because the quicklime sets free the ammonia contained in the guano, and causes it to escape into the air.

**Q** Is it better to use guano alone, or in place of one half only of the usual farm-yard manure?

**A** It is better husbandry to use it in raising turnips and potatoes, mixed with one-half manure.

**Q** Why is it better husbandry?

**A** Because the guano used alone, does not supply to the land a sufficient quantity of organic matter to maintain it in the most productive state.

**Q** How much guano would you apply per acre?

**A** About two cwt. per acre as a top-dressing for the corn crops, and two or three cwt., when used instead of half the dung, for potatoes and turnips.

**Q** What kind of fish refuse is usually employed as a manure?

**A** In the curing stations the cuttings and cleanings of the herring and pilchard, and the heads of the cod are extensively employed as a manure.

**Q** How is this refuse best used?

**A** The best way is to make it into a compost with earth and a quantity of marl, if any of the latter is at hand, and to turn it over once or twice before using.

**Q** Name the most important mineral manures?

**A** The most important mineral manures, are nitrate of soda, sulphate of soda, common salt, gypsum, kelp, wood ashes and lime.

**Q** What is nitrate of soda?

**A** Nitrate of soda is a white salt-like (saline) substance, which is found in the earth in some parts of Peru, and is often applied with great advantage as a top-dressing to grass lands and to young corn.

### For the Ladies.

#### THE CAPTIVE.

A SCENE IN A PRIVATE MAD HOUSE.

BY M. G. LEWIS, ESQ.

Stay, gaoler, stay, and hear my woe!

She is not mad who kneels to thee,

For what I'm now, too well I know.

And what I was, and what should be,

I'll rave no more in proud despair.

My language shall be mild though sad;

But yet I'll firmly, truly swear,

I am not mad! I am not mad!

My tyrant husband forged the tale

Which chains me in this dismal cell.

My fate unknown my friends bewail:

Oh! gaoler haste that fate to tell!

Oh! haste my father's heart to cheer;

His heart at once 'twill grieve and glad

To know, though kept a captive here,

I am not mad! I am not mad!

He smiles in scorn, and turns the key!

He quits the grate! I kneel in vain!

His glimmering lamp still, still I see!

'Tis gone—and all is gloom again!

Cold, bitter cold! No warmth! no light!

Life, all thy comforts once I had,

Yet here I'm chained this freezing night!

Although not mad! no no! not mad!

'Tis sure some dream! some vision vain!

What! I, the child of rank and wealth!

Am I the wretch who clanks this chain,

Bereft of freedom, friends, and health?

Ah! while I dwell on blessing fled,

Which never more my heart must glad,

How aches my heart! how burns my head!

But 'tis not mad! no, 'tis not mad!

Hast thou, my child, forgot ere this,

A mother's face, a mother's tongue!

She'll ne'er forget your parting kiss,

Nor round her neck how fast you clung;

Nor how with me you used to stay,

Nor how that suit your sire forbade;

Nor how—I'll drive such thoughts away,

They'll make me mad, they'll make me mad!

His rosy lips, how sweet they smiled!

His mild blue eyes, how bright they shone!

None ever bore a lovelier child!

And art thou now forever gone?

And must I never see thee more,

My pretty, pretty, little lad?

I will be free! I'll open the door!

I am not mad! I am not mad!

Oh! hark! what means those dreadful cries?

His chain some furious madman breaks!

He comes!—I see his glaring eyes!

Now, now, my dungeon grate he shakes!

Help! help!—He's gone—Oh fearful woe!

Such screams to hear! such sights to see!

My brain, my brain! I know, I know

I am not mad—but soon shall be!

Yes, soon!—For to you!—while I speak,  
Mark how you demon's eye-balls glare!  
He sees me—now with dreadful shriek,  
He whirls a serpent high in air.  
Horror! the reptile strikes his tooth  
Deep in my heart, so crushed and sad!  
Ah! laugh, ye fiends! I feel the truth!  
Your task is done!—I am mad! I am mad!

The above lines are touchingly beautiful. We insert them that our readers may be reminded of what frail materials they are made, and to what a distressing situation they may in a moment be reduced.

It happens that the room in which we sit while writing these lines is just opposite the Lunatic Asylum, and we have only to turn our head to see six or seven females of different ages, from the young girl of eighteen to the old woman of sixty, huddled together in one room, and all of them crazy. The shrill ringing laugh, the merry song, the low moan of apparent anguish, the description of home scenes, the childish cry, the hot words of dispute, the prayer, and the fierce oath, are the discordant sounds that salute the ear at the same moment. One young girl with a very interesting countenance, has a most tender and melodious voice. She will sometimes break out in a hymn, and for one or two lines, such is the melancholy unearthly sweetness of her voice that it is impossible to sit still—it electrifies you. She talks of heaven and her God, and quotes scripture frequently and correctly. Several of them, from their conversation, seem to have led very improper lives. Dissipation and remorse have probably driven reason from her throne. What an awful reflection! How careful should we be to walk in the path of virtue when such is sometimes the terrible penalty of a departure from it.

There is one thing we cannot understand, viz. the benefit to be derived by these unfortunates, from being shut up together in the same room. If there was any chance of their recovery we should think it would be frustrated by such an arrangement. Indeed we are not very sure but we should go mad ourselves if compelled to remain long in such company.

### Scraps.

**PRICED POTATOES.**—Cold potatoes that have been boiled should be used for this purpose. Lay them in a frying pan with sufficient milk (or cream) to cover them, add a little butter, salt and parsley, and fry them until the milk thickens, they will be sufficiently cooked in a quarter of an hour, and make an excellent dish for breakfast.

TO SALLY ANN.

Soft is the down on the butterfly's wing,  
Soft is the whisper when lovers speak;  
Soft is the light which the moonbeams fling,  
But softer by far is my lady-love's cheek.

SAT L Y'S REPLY.

Soft am I,aters all smashed up,  
And much as soft as much kin be;  
But softer be that silly pup,  
Who writ that verse to me.

Go it, Sarah, never mind your bonnet

**LITERALITY.**—A youth who it is charitably presumed, had never "seen the elephant," recently found himself in the company of three young ladies, and generously divided an orange between them.

"You will rob yourself," exclaimed one of the damsels.

"Not at all," replied our innocent; "I have three or four more in my pockets."

**SATISFACTORY DEFINITION.**—A little girl asked her sister "what was *chaos* that Papa read about?" The older child replied, "Why, it is a great pile of nothing, and no place to put it!"

**CONCLUSIVE EVIDENCE.**—An English Judge of Assize, at Preston, in charging a Jury in a case of murder said:—

"You cannot have any doubts as to the prisoner's guilt; his very countenance would hang him!"

What a blessing it would have been for this poor man if he could have been out of countenance for a few hours. We wonder that the Judge's charge did not do it, and thus save the man it was intended to hang. His Lordship probably forgot the sound legal maxim that a man cannot be made evidence against himself.

**TRUE PENURY.**—A fastidious young lady vowed she would never have an Irishman, a Presbyterian, or a parson, and ended by marrying an Irish Presbyterian parson!

Santa Anna being asked if he had any personal dealings with Taylor and Scott, replied, "Yes, I have kept up a running account with both of them."

"You are writing my bill on very rough paper," said a client to his attorney. "Never mind," said the lawyer, "it has to be filed before it comes to court."