

### The Habits of a Man of Business.

A sacred regard to the principles of justice forms the basis of every transaction, and regulates the conduct of the upright man of business. He is strict in keeping his engagements; does nothing carelessly or in a hurry; employs nobody to do what he can easily do himself; keeps everything in its proper place; leaves nothing undone which ought to be done, and which circumstances permit him to do; keeps his designs and business from the view of others; is prompt and decisive with his customers, and does not over-trade for his capital; prefers short credits to long ones, and cash to credit at all times, either in buying or selling; and small profits, in credit cases, with little risk, to the chance of better gains with more hazard. He is clear and explicit in all his bargains; leaves nothing of consequence to memory which he can and ought to commit to writing; keeps copies of all his important letters which he sends away, and has every letter, invoice, &c., belonging to his business, titled, classed, and put away; never suffers his desk to be confused by many papers lying upon it. Is always at the head of his business, well knowing that, if he leave it, it will leave him; is constantly examining his books, and sees through all his affairs, as far as care and attention enable him; balances regularly at stated times, and then makes out and transmits all his accounts current to his customers; avoids, as much as possible, all sorts of money matters and law-suits where there is the least hazard; keeps a memorandum-book, in which he notes every little particular relative to appointments, addresses, and petty cash matters; is cautious how he becomes security for any person, and is generous only when urged by motives of humanity.

### Magnitude of Waves, by Mr. Thos. Herless.

The highest waves measured were about 35 feet in height from the trough, no broken crests having been measured. Their speed varied (the force of the wind being 8 according to the Board of Trade scale, and equal to weather in which a ship on a wind can just carry treble-reefed topsails) from twenty to twenty-three miles per hour, the breadth of trough being 300 to 350 feet. The observations show that usually the succession of magnitudes (or heights) returns in series of twelve waves, the first and second of each series being very large, the sixth or seventh being also large, but inferior in magnitude to the first and second, and the intermediate ones being small. The observations show that waves are limited in length, measured along their bases, the crest being apparently at the middle point of the base, and the length varying with the altitude of the crest, and that the order of succession of magnitudes depends upon their being arranged so that the crest of one wave follows on the same line as the lower flanks of a preceding wave. The speeds also of waves appear to vary, so that a following wave often coalesces with, and is increased in size by, absorbing one immediately preceding. When a wave is first formed, it is small, and increases in size in its progress, until the crest topples over in foam, after which the height decreases rapidly; and there seems reason for thinking that if ordinates were drawn so as to represent the height of any wave at different periods of its existence, its height would be found

to coincide with Mr. Scott Russell's wave-line curve. The length of a wave in open water, measured along its base, seems also to depend upon and bear a definite relation to the width of the trough between two successive waves. The speed of the waves is not so much affected as would naturally be imagined by the force of the wind. In a moderate gale they run as fast as in a heavy one. It is otherwise with their height.

### Extraction of Copper from Roasted Pyrites.

In the year 1850 Mr. Gossage showed that the copper amounting to about one per cent. in Irish pyrites, could be extracted, and this is still more practicable in the case of Spanish pyrites, which contain about 3 per cent., and, after roasting, from 5 to 6 per cent. The extraction of copper is, however, rarely carried out by the sulphuric acid manufacturer. In England the copper is obtained in the dry way by successive meltings. In France the roasted mineral is exposed to the action of the air, the copper sulphate thus produced is extracted by water, and the metal precipitated by iron. More recently the copper has been extracted as chloride, by melting the roasted mineral with sodium chloride. The method patented by Mr. Henderson, is worked at Mostyn with the pyrites residues from Messrs. Muspratt's works, and works are being erected near Glasgow for treating the residues from Messrs. Tennant's works.

### Application of the Sulphur obtained in purifying Coal Gas.

The method introduced by Mr. F. C. Hills for purifying coal gas from sulphur consists in passing it over a mixture of sawdust and hydrated ferric oxide. By exposing the iron sulphide, thus produced to the air, it is oxidised, sulphur being separated, and hydrated ferric oxide reproduced. After this operation has been repeated several times, the sulphur will amount to about 40 per cent., and the material is then unfit for the purification of gas, but is used for producing sulphurous acid by roasting it in reverbratory furnaces, so as to present a large surface for oxidation. In 1859 the consumption of this material at Mr. Lawes' factory at Barking Creek, was 737 tons, and in 1861 it was 2180 tons. This material is said to yield one and a-fourth its weight of oil of vitriol.

### Cements for Steam Joints.

Plumbago has recently been introduced as the basis of a superior cement for steam joints, and the general metallic connections of the Engineer. It is composed of six parts of Plumbago, three of slacked lime, eight of sulphate of baryta, and three of boiled linseed oil. This compound, it is said, secures a perfectly air and steam-tight joint, much superior to that obtained by the use of red lead.

### Importance of Manufactures.

If we aspire not to be a manufacturing country, we need not aspire to be a great or populous country, nor to enjoy any large share of the luxuries or comforts of civilized life. England is great because of her manufactures, and Canada will only be great when her staple manufactures are at least sufficient to supply the wants of her people.