experiments encouraged us to extend them much farther. We hoped by these means to discover the absolute cohe­sion of many substances, which would have required an enormous apparatus and a most unmanageable force to tear them asunder directly. But we could reason with confi­dence from the resistance to twist (which we could easily measure), provided that we could ascertain the proportion of the direct and the lateral strengths. Our experiments on chalk, finely prepared clay, and white bee’s wax (of one melting and one temperature), were very consistent and satisfactory. But we have hitherto found great irregula­rities in this proportion in bodies of a fibrous texture like timber. These are the most important cases, and we still hope to be able to accomplish our project, and to give the public some valuable information. This being our sole ob­ject, it was our duty to mention the method which promises success, and thus excite others to the task ; and it will be no mortification to us to be deprived of the honour of being the first who thus adds to the stock of experimental knowledge.

When the matter of the axle is of the most simple tex­ture, such as that of metals, we do not conceive that the length of the axle has any influence on the fracture. It is otherwise if it be of a fibrous texture like timber; the fibres are bent before breaking, being twisted into spirals like a cork-screw. The length of the axle has somewhat of the influence of a lever in this case, and it is easier wrenched asunder if long. Accordingly we have found it so ; but we have not been able to reduce this influence to calculation.

Many useful deductions might be made from these pre­mises respecting the manner of disposing and combining the strength of materials in our structures. The best form of joints, mortises, tenons, scarphs, the rules for joggling, ta­bling, faying, fishing, &c. practised in the delicate art of mast-making, arc all founded on this doctrine; but the dis­cussion of these would be equivalent to writing a complete treatise of carpentry. (b. b. b.)

The most recent experiments on the strength and elas­ticity of material give the results entered in the following tables.

Table I.—*Distensions of Pods for a Strain of one Pound per Square Inch ; computed from the results given in Tredgold, edition of* 1840, *as deduced from observations on transverse strain.*

B

ritish timber......{Oak ........1/22000

Larch............................1/36000

Scotch fir 1/80000

Ash 1/120000

Memel fir 1/75000

Norway fir 1/109000

American pine.............1/50000

White spruce................1/92000

Riga oak 1/100000

American oak 1/100000

English malleable iron 1/24200000

Table II.—*Cohesive Strengths of Bars per Square Inch.*

lbs. lbs.

Oak from 14,000 to 19,000

Beech from 11,000 to 22,000

Ash from 12,000 to 17,000

Elm from 13,000 to 14,000

Mahogany from 8,000 to 21,000

Teak from 8,000 to 15,000

Pine (Norway) from 7,000 to 14,000

Larch from 9,000 to 10,000

Iron wire from 94,000 to 113,000

Swedish iron from 53,000 to 78,000

English iron from 55,000 to 66,000

Cast iron from 16,000 to 33,000

flames. The access to the summit, though fatiguing, is not dangerous. When a person approaches the crater, and the smoke clears away, as it does at intervals, he can observe an undulating igneous substance, which at short periods rises and falls with great agitation, and when swollen to the ut­most height bursts with a violent explosion and a discharge of red-hot stones in a semi-fluid state, accompanied with showers of ashes, and a strong sulphureous smell. These masses are thrown up to the height of from sixty or seventy to three hundred feet, and some few even to a thousand. In the moderate ejections the stones in their ascent gra­dually diverge like a grand pyrotechnical exhibition, and fall again into the abyss, except on the side next the sea, where they roll down in quick succession to the water.

The island contains about 1200 inhabitants. The prin­cipal places are St Bartolo and St Vincenzo. The soil is a black mold, very fertile, consisting of argilaceous tufa, scoriæ, puzzolana, and sand. Stromboli produces some good wine, with excellent wheat, barley, cotton, rasins, cur­rants, and figs. The church of St Bartolo is in long. 15. 13. 10. E., and lat. 38. 48. 12. N.

STROMNESS, a town in the parish of the same name in the island of Pomona, Orkney, in long. 3. 38. W. and lat. 58. 58. N. The town is situated on the western side of the island, and was formerly an insignificant village, dependent on the borough of Kirkwall, which kept it completely under; but by a decision of the House of Lords, Stromness and all other vil­lages were declared free from being assessed, and otherwise independent of royal boroughs. The present town consists of one long rambling street, built round the bay on which it is placed. The greater portion of the houses are built so close on the water that they require to be defended by bulwarks, jetties, and quays, to keep them from being overwhelmed by

STRETCHING, in *Navigation,* is generally under­stood to imply the progression of a ship under a great surface of sail, when close-hauled.

STRETTA (Ital.), a musical term, often applied to the last allegro of a finale, &c. in an opera. It signifies also a kind of peroration or winding up of a piece of music, par­ticularly of a fugue. See Music.

STRETTO, or *più Stretto* (Ital.), indicates an accele­ration of the time of a piece of music.

STRIATED Leaf, among botanists, one that has a num­ber of longitudinal furrows on its surface.

STRIKE, a measure of capacity, containing four bushels. Also an instrument used in measuring corn.

STROMBOLI, the most northern island of the Lipari group, in the Mediterranean, being a part of the kingdom of Naples. It was known to the ancients by the name of Strongyle ; a name implying a conical mountain with an ir­regular base. The mountain is bifurcated, upwards of 2000 feet in height, and about nine miles in circumference, and is evidently a monstrous product of subterraneous fires. The crater of this mountain is on the north-west side, about two thirds of the whole height from the base ; it is of a circular form, and about one hundred and seventy yards in diameter, and has a yellow efflorescence adhering to its sides, as to those of Mount Ætna. This crater has burnt without inter­mission from the earliest periods, and is supposed to be sup­ported by oxygen, pyrites, and sulphur ; but there are not any traces of the aid of bitumen. It appears to be not only the vent of all these islands, but likewise to have subterra­neous communication with Sicily and Italy ; for, previously to a severe earthquake taking place in those parts, Strom­boli has been observed to be covered with dense clouds of smoke, and to emit with increased activity unusually ardent