brightly, he was astonished to see a heavy rain-shower which appeared to be driven towards him by a violent wind He extended his hand. No drops were falling, his clothes were quite dry, but at the same moment he was struck with violent palpitation. He threw away his cigar, the violent beatings of his heart ceased, and the vision disappeared. Many times this phenomenon recurred. He abandoned tobacco, and the accidents quickly disappeared. Thinking himself perfectly cured, he commenced again to smoke, but the palpitations and visions reappeared. Complete abstinence was his only safety.

The step from temporary hallucination to chronic lunacy is not very great, and we find on record the case of a man who became insane, and whose recovery was due to a lucky accident, which barred him from access to his usual indulgence Druhen narrates another note-worthy case. A middle-aged man, in good health and of steady habits, was sent by his employer to Paris, charged with papers of considerable value. The importance of the trust preyed very much upon his imagination, and led to an attack of melancholy mania. He was under medical treatment about three weeks, during which time his usual desire for tobacco disappeared. On his recovery he again commenced smoking moderately. A few months after another attack commenced, and he began to talk once more of the (imaginary) risks and dangers he had encountered in his journey to Paris. Druhen saw that he was upon the brink of insanity, and his first prescription was "No tobacco!" Under this *régime* the man has since enjoyed the best health.*

These facts, although curious, are not entirely decisive, for, in judging by individual cases, there is always a risk of mistaking the exception for the rule. There are, however, data of a more absolutely convincing nature which we commend to the careful consideration of young smokers and their parents.

In 1855, M. Bertillon divided the 160 pupils of the Paris Ecole Polytechnique into smokers and non-smokers, with a view of testing this question. The results in the examinations of the twenty who stood highest, and those next to them, have been thus stated:

Smokers.		Non-smokers.
6	.....	14
10	.....	10
11	.....	9
14	.....	6
13	.....	7
15	.....	5
16	.....	4
17	.....	3
102		58

An examination of this table will show that whilst the non-smoking pupils exhibit a steady upward tendency, the contrary is the case with the smokers. Although the majority in numbers, they were the minority in intellectual attainments The contrast is most instructive, and demonstrates conclusively the deadening influence of this popular narcotic upon the functional activity of the brain. If tobacco were, as its apologists sometimes claim, the handmaid of thought, a very different result must have ensued. Dr. Murray, of Newcastle, who is not an opponent, but a defender of smoking, says: "My own personal experience and observation among medical students, is supported by the results of examinations for law and divinity, smokers having been found behind non-smokers in ments' calibre. So long ago as 1606, a medical writer sa tobacco is not safe for the young, and should be called 'ouths bane." Sir Benjamin Brodie, from the result of experiments upon animals, affirms that the oil of tobacco acts by destroying the function of the brain. This, of course, refers to its administration as a poison; but who can think with coolness upon our youth, voluntarily sapping the vigor of their brains —the only organ in which we excel (?) the brute creation— and thus wearing out their nervous systems ere they have fairly entered upon the important duties of life?

It will be seen that medical science and statistics confirm, by *a posteriori* evidence, that which physiology would lead us to expect on *a priori* grounds. It would be folly to suppose that the brain, with all its minutely wonderful mechanism, should not be injured by continual contact with blood weakened and deteriorated—poisoned—by contact with deadly principles evolved in smoking tobacco.

Smoking is now so common amongst persons of unformed constitutions, that the facts here detailed acquire a grave importance. If juvenile smoking continues and extends, we may look for generations endowed with weaker brains and duller intellects in a continued series of degradation Let those who would not have our brave, bright, English lads degenerate into a race of dyspeptic dullards, warn them, as they wish for the full exercise of that power to think, which is their greatest privilege and glory, as they hope for clear heads and unclouded brains, to resist the dreamy seductions of tobacco.—*The Builder.*

* Druhen, du Tabac," 1867, p. 56

THE CENTRAL RAIL RAILWAY.

We have no sooner concluded that human invention ha attained its limit in this, or that, special direction, than all at once we are startled by some announcement which shows that what we supposed to be its ultimate form was only a stage in development. Who would have thought till a few months since, notwithstanding the "pannier" railway proposed last year, that trains would ever run upon other than two rails? And now such a project is before the world, which, its promoters assert, will probably revolutionize the present system. In this project, the inventor utilises the principle by which the bicycle rider travels balanced and steady above two narrow wheels. In the proposed single line of rail system the carriages and engine will have a single row of central and double-flanged wheels striding or saddling the single central rail.

The recollection of mishaps and upsets to bicycle riders in starting will probably excite the reader's smile as soon as the project is proposed to him. But the inventor does not intend that his engines and carriages shall struggle into steadiness like the bicycle rider: he provides balance-rails and wheels. The balance-rails are provided for some distance in and out of stations. The carriages and engines will be brought very much nearer the ground, and many other sources of danger in our present railway system will be mitigated,—at least so says the inventor, who proposes lighter trains and engines, and that trains shall run more frequently. Existing lines would be able to accommodate three or four "ways" of the new style within the compass of the usual "up" and "down" lines.

The inventor suggests several forms in which, under different circumstances, the system may be worked.

DAVIS' "STEAM STRIKER"

The machinery represented in the engravings on pages 186, and 187, which is exhibited at Vienna by the patentee, Mr D Davies, of Viaducts Works, Crumlin, Newport, Monmouthshire, is unique of its kind, and has deservedly attracted a good deal of attention in the Exhibition. It is intended for all kinds of small forging work about a smithy, for which the steam hammer is scarcely suitable, but an examination of our engravings will show better than any lengthened statement of ours the kind of work for which it is most adapted The machine may be described shortly as a tilt hammer worked direct by a steam cylinder (the blows being controlled by a foot lever), and capable of being turned round by a simple apparatus so as to deliver the blows at any angle to the anvil.

In our engravings Fig 1, is a front elevation of the machine; Fig. 2, is a vertical section through the line A, A, in Fig. 3; Fig. 3, is a sectional plan on the line B, B, in Fig. 2, Fig. 4, is a vertical section through the valve-chest and turning gear and Fig. 5, is a section at D, in Fig. 2. The rest of the figures show a side elevation and outside plan of the machine The arrangement of the striking gear is as follows: The hammer shaft itself, which works on a fixed pin, 2½ inches in diameter, is connected at its hinder end with a pin in the lower end of a short connecting rod. This rod is free to vibrate in a large slot made in what may be called the piston