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Price 10 cents. For sale by all newsdealers.

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THE SCIENTIFIC AMERICAN AS AN EDUCATOR OF THE YOUNG.

It is a common remark of teachers that a very brief acquaintance with the pupils of a school suffices to determine which come from reading families, which do not; and it is scarcely less easy to decide what kind of reading is current in a family. The intellectual society which young people enjoy tells upon their moral and mental character not less powerfully than do their social affiliations. The devourer of sensational stories is as little likely to excel in studies requiring patient effort and sobriety of mind, as the habitual reader of the SCIENTIFIC AMERICAN is to run away with a two-dollar pistol and a brierwood pipe, to hunt buffaloes and slay Indians on the plains. In speaking of the SCIENTIFIC AMERICAN as reading for boys, we do so with a full appreciation of the fact that it is conducted rather for the instruction and enjoyment of men. Nevertheless the amount of matter it furnishes of a nature to interest boys—or, more explicitly, perhaps, the number of boys who find it a perennial source of entertainment and instruction—fully justifies a few words with respect to its value as a family paper. In thousands of families its weekly appearance is hailed with as lively a sense of satisfaction by the young as by the old, and very many of the staunchest supporters of the paper have read it almost from childhood.

A day or two since we had the pleasure of an interview with a New England clergyman, whose pride in the practical and scientific bent of his son's mind was pleasant to see; not the less so because the father attributed the son's success as a student chiefly to the influence of the SCIENTIFIC AMERICAN. Some years ago the boy's grandfather, a professor in a well known college, presented him with a subscription to this paper. The effect would be marvelous, if it were an isolated case, in giving a serious and practical bent to the young man's development. Boys very commonly turn their surplus energy to mischief simply for lack of better occupation. They must be doing; and the ordinary routine of schooling furnishes little to satisfy their natural want for bodily activity, exploration, and constructive occupation. The SCIENTIFIC AMERICAN meets the want. Its illustrations of nature and art are attractive and suggestive. The boy is led to take more than a trivial interest in the phenomena of nature, and in the work that men are doing the world over. He observes, experiments; in short, finds pleasurable occupation, according to his bent, in activities that tell most beneficially upon his mental habits, the general tenor of his thinking, and the advancement of his physical, mental, and moral development.

This has been the experience of multitudes of parents. And even if the education the boys receive, directly and indirectly through the information and suggestions furnished by the paper, were of no value whatever, its influence would be good in preventing activities that are harmful. So long as a boy is busy at a windmill, a telephone, a toy steam engine, a rowboat, or other scientific or mechanical undertaking, he is pretty sure to be kept from mischief, frivolity, and vice. We have been told by teachers of experience that, excepting an occasional boy of vicious taint by inheritance, the most hopeful boys were those of the worst reputation for mischievous activity. Their energy took that channel simply because no other had been furnished them. Only get such boys interested in something else and their troublesomeness disappears. The boy that is "into every thing," and a perpetual torment because of his misdirected energy, will soon find something better to do if a wider range of activity is once brought within his ken. And not a few parents have found in the SCIENTIFIC AMERICAN a ready means for turning mischievous activity into useful channels.

THE REGISTRATION OF TRADE MARKS.

As announced in this paper last week, the Patent Office will continue to register trade marks, but only in favor of those who shall request such registration with full knowledge of the decision of the Supreme Court, adjudging the trade marks act of July 8, 1870, to be unconstitutional. Action on all pending applications has been suspended, to await instructions from applicants. The Commissioner of Patents also announces that fees heretofore paid in trade mark cases cannot be refunded without further legislation from Congress.

Below is the official summary of the points held by the Supreme Court with respect to the origin of property in trade marks, the nature of trade marks, and the constitutionality of congressional legislation in regard to them:

- 1. Property in trade marks has long been recognized and protected by the common law and by the statutes of the States, and does not owe its existence to the act of Congress providing for their registration in the Patent Office.
2. A trade mark is neither an invention nor a discovery, nor the writing of an author within the meaning of the clause of the Constitution in regard to securing to authors and inventors the exclusive use of their writings and discoveries.
3. As a regulation of commerce, if trade marks can be in any case the subject of congressional action, that action is limited by the Constitution to their use in "commerce with foreign nations, among the several States, and with the Indian tribes."
4. The legislation of Congress in regard to trade marks contains nothing in its terms, or in its essential character, which looks to a regulation thus limited, but in its language

it embraces, and was intended to embrace, all commerce, including that between citizens of the same State.

5. As the statute is so framed that it is impossible to separate that which has reference to commerce within its control and that which is not, and as Congress certainly did not intend to pass the limited registration law which such a construction would imply, the whole legislation must fall, as being void for want of constitutional authority.

About a year ago the United States Trade Mark Association was founded to promote the interests of trade mark owners. At a special meeting in this city, November 24, to consider what steps should be taken in regard to the action of the Supreme Court, quite a number of prominent manufacturing firms were represented. In his opening address the president, Mr. Orestes Cleveland, of the Dixon Crucible Company, called attention to the fact that the rights of trade mark owners had not been in any way affected by the decision. The law declared unconstitutional had merely provided an office for the registration of trade marks properly adopted though not yet in market. The only value of such an office was the means it afforded for establishing priority. He thought the protection of trade marks was due as much to the public as to manufacturers. This was the ground taken by the court in the first infringement suit tried in England. Damages were awarded to the buyer of the spurious article, though denied to the manufacturer.

It was suggested that the association should establish an office for the registration of trade marks, to secure the advantages hitherto obtained through the Patent Office. The same plan has apparently worked well in France, and could no doubt be made useful here. The Union des Fabricants, founded in Paris, in 1877, has, it is said, already collected and classified some 30,000 trade marks. The Union also takes pains to get and keep copies of all infringement suits, besides collecting such facts of daily occurrence as relate to industrial property and promise to be of use to the members. A similar office in this city, as proposed by the Trade Mark Association, could make itself very useful.

HOW TO JUDGE OF LEATHER IN BELTS.

Without entering into the question of the merits or demerits of rubber or other kinds of belting, one cannot but notice the want of unanimity of opinion, even among belt manufacturers, as to what really constitutes the best leather for making belts to convey power in running machinery; and, if we include makers of belts on the other side of the Atlantic, the differences in theory and the divergence in practice are much wider than they are here. As a rule, too, this is a matter about which machinists generally have but little information, and are, with here and there only a rare exception, but indifferent judges. The good mechanic may know the size of a pulley or wheel required to give the necessary bearing surface, the weight of belt which should be used, and at what tension it should be run to most effectually transmit a given amount of power; but when it comes to judging of the qualities of different kinds of leather, with respect to the amount of even and steady wear that one will give as compared with another, he is almost invariably quite at sea. Of the general appearance and finish of the belting we are not now speaking; although important details render good judgment in regard to many points here quite necessary, these are not necessarily dependent on the intrinsic quality of the leather used, and it requires only a good mechanical eye to see whether a belt is smooth, solid, well-jointed, and lies even and true.

The best belt, theoretically, is that which combines the highest tensile strength with the greatest power to resist wear by attrition, being at the same time subject to little change by dryness, moisture, heat, or cold. These qualities, supposing the manufacture to be ordinarily good, are mainly dependent upon the tanning. But right here it is to be remembered that perfectly raw hide has greater tensile strength than can be possessed by any leather made from it. The raw hide, however, would never answer, for many and obvious reasons. The question then arises as to how much and what kind of tanning will best preserve the tensile strength of the hide, while imparting to it those other qualities needed in good belting, and how can such tanning be judged of by one not an expert in the leather business. In Europe there is very little difference known or acknowledged between good sole and good belting leather. The heaviest or "plumpest" leather is usually considered there the best for belts, as well as for the soles of boots and shoes. Our belt makers, however, recognize an essential difference. The sole of a boot or shoe, particularly in all heavy work, needs to have but little flexibility, but must have the greatest possible capacity to resist wear by attrition, and be, as far as practicable, impervious to water, while it is never subjected to any test of its tensile strength. Sole leather, therefore, in all the toughest wearing grades is made as thick and solid as the tanner can make it; great care is taken to open wide the pores of the hide, in the early part of the tanning process, see that all the gelatine is saved to combine with tannin, and that the hide is left in the tan liquors long enough to take up all the tannin it will absorb. This makes the finished leather oftentimes a great deal thicker than the original hide. But such leather, it need hardly be said, would not be the best for making belts, for it has little flexibility, and its tensile strength has been greatly impaired by the straining of the fibers of the hide to take in the large amount of tannin it has received. The tanner who would make the best belt-leather, how-