Scientific Museum.

For the Scientific American.

Tanning--Practical Remarks.

Messrs. Editors—In your paper of the 12th January, you gave an account of a method of tanning, from the work of J. Burbridge, Esq., 1825. This is an age of progress, and very important improvements have been made in this article of Leather since that period; so that the method he has laid down, would be considered obsolete, in this country, at least at the present time. The business has increased beyond all precedent, and the quality of the sole leather turned out is very much improved also.

The tanneries erected in these days are from 2 to 500 feet long, 30 to 40 feet wide, and generally two stories high, the lower story filled up with vats, 8 feet by 7 on the surface, and 5 feet deep, except at one end, is placed the beam-house, where the hides are prepared for the bark; by softening them to a natural state, as near as possible to the living nature; with a removal of all the hair and flesh appertaining to them. The old method of softening dry hides was after soaking them in water sufficiently; to place them in a circular trough of solid materials, and roll over them a heavy circular stone, 4 or 5 feet in diameter, with notches worked into the face of the rim, drawn by a horse—after the method of our forefathers crushing apples to make cider. As early as 1810 the Hide Mill, something like a fulling-mill, was introduced, with sundry other improvements, by Col. William Edwards, then of Northampton, Mass., (of which I may speak more particularly hereafter.) About the year 1830 the cold sweating process was reduced to system by Thomas Hunt, of western New York, to remove the hair from the hides, which is now almost universally adopted by the trade. It is a simple operation of nature, which every dog who buried a woodchuck till the hair started, seemed to have known; but which, like many other improvements, man was slow to discover. Pits are constructed of solid materials (stone or brick are doubtless the best) in the ground, convenient to the beam-house, but should be so far from it as not to be affected by its temperature. They are 10 feet wide, 12 feet long and 10 feet deep to the roof, which should be like ordinary roofs of buildings above ground, rising from the sides to the centre, on an angle of 45 degrees, covered with plank two inches thick, laid close together. An opening in the apex, two inches wide, leading to the surface of the ground. This roof must be covered with earth, at least six feet deep.—Most of the large tanneries have six of these pits arranged on the sides of an alley, six feet wide, covered with flat timbers and earth, which leads from the floor of the beam-house. Each pit has a door four feet wide, opening into the alley, and underneath the alley should be a trunk of plank to conduct fresh air from the wheel-pit in the beam-house to the centre of each sweat-pit, where there is an opening closed at pleasure. By attending to this opening, and the one in the apex, the operator can regulate the temperature of the sweat pits.

We shall continue an account of the process in a future number. W. W. E.

Coal Gas Charcoal.

In the manufacture of coal gas a very singular form of charcoal is deposited in the retorts, and in the tubes connected with them, resulting from the decomposition of the first products of the distillation of coal. It has a grey colour, and often exhibits a laminated texture; and it breaks with an earthy fracture. It sometimes happens that the gas escapes through some crack in the retort, in which case, a pecular carbonaceous deposite forms upon the surrounding brickwork, of a stalactitic character an iron grey colour, and considerble lustre; it does not easily burn, nor does it soil the fingers, and some specimens, as far as mere appearance goes, might be considered as metallic. Some years ago Mr. Charles Macintosh, of Glasgow, made steel by passing coal gas over ignited iron, placed in an air-tight iron chest: in this process much carbon was deposited in various states, but some of it assnmed the remarkable form of capillary filaments, and tufts of a metallic lustre; the same tufts are frequently found in considerable quantities amongst the coke manufactured under Mr. Church's patent; they are very difficult of combustion, but when deflagrated with nitre, yield no trace of iron, and are, apparently, pure carbon. All these forms of carbon are excellent conductors of electricity, and when sawed into plates, serve admirably instead of platinum for a galvanic arrangment.

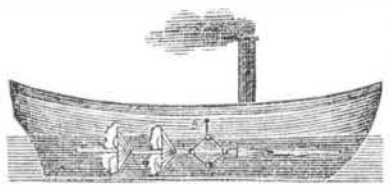
History of Propellers and Steam Navigation.

[Continued from page 176.]

SIDE FAN PROPELLER.

Various plans have been proposed from time to time, to propel by a kind of propeller that would close when moving forward against the water, to offer at least but little resistance to it, and would open when moving backward to act with great surface and power on the water. The Duck foot Propeller, of the Earl Stanhope, was devised to act on this principle, which really has something very plausible and self-commending in it. As practical experiment, however, is the real test of any invention—the touchstone of its economical value—so in the case of the duck-foot paddle, it was "weighed in the balance and found wanting."

Fig. 23.



The invention represented in this engraving was invented about twenty years ago, and it was the result of observing the powerful action of the "tail of a fish." The piston of the engine being attached to the rod, A, will alternately open and shut a series of sliding submarine fans, which may be variously constructed, and placed without the sides or bow, or stern of a vessel, keeping up a constant pressure upon the water, and a consequent motion upon the vessel forward, without backwater or splashing. Hinged paddles attached to a reciprocating frame, so as to fold upwards, and assume a horizontal position when moving forwards, and to have their flat full surfaces acting upon the water, when moving backwards, have been brought forward oftentimes since the above was brought forward. About two years ago, only, the same thing was brought forward in this city, and high hopes were entertained about it, but it now reposes in oblivion.

It is something very annoying to the man accustomed to scientific research, to find the same things invented over and over again by different individuals, living in different places. Within three years the duck-foot propeller has appeared in public print, as something new, because somewhat modified from the original one, in contour and arrangement. In the London Mechanics Magazine, for 1845, there are two engravings of plans for propelling, by applying the direct action of the piston rod to move a fan piston to act upon the water at the stern of a vessel, and close when moving forward, so as to propel the vessel upon the same principle as that represented above. There can be no question of its simplicity, but simplicity, although desirable, is not always possible to accomplish certain objects, but the most simple way to do a certain thing, is certainly the best. Every thing must be judged by its effects—its whole effects.

An English Savan recently lecturing before a learned society in London, on the gold of California gave it as his opinion, that platina, garnets, and diamonds were overlooked in a very great degree by the gold finders, and that they would be found in large quantities. He also stated that tons of gold had passed through the hands of a single English house.

The whole number of flouring mills in operation in Michigan during the last year, was 228, having 508 run of stone, turning out 719,478 barrels of flour, giving employment to 598 hands, with an investment of capital amounting to $1,496,400.

The Telescope.

The interesting and humbling views of the absolute and relative extent of the solar and sidereal systems, we owe entirely to the Telescope,—an instrument which has a higher claim to our admiration than it has received, and which, by the improvements of which it is susceptible, will present in Astronomy much grander discoveries than the most sanguine of its students has ventured to imagine or anticipate. There is, indeed, no instrument or machine of human invention, so recondite in its theory and so starling in its results. All others embody ideas and principles with which we are familiar, and however complex their construction, or vast their power, or valuable their products, they are all limited in their application to terrestial and sublunary purposes. The mighty steam engine has its germ in the simple boiler in which the peasant prepares his food. The huge ship is but the expansion of the floating leaf, freighted with its cargo of atmospheric dust; and the flying balloon is but the infant's soap bubble lightly laden and overgrown. But the Telescope, even in its elementary form, embodies a novel and gigantic idea, without an analogue in nature and without a prototype in experience. It enables us to see what would forever be invisible. It displays to us the being and nature of bodies which we can neither see, nor taste, nor touch, nor smell. It exhibits forms, and combinations of matter, whose final cause reason fails to discover, and whose very existence even the wildest imagination never ventured to conceive. Like all other instruments it is applicable to terrestrial purposes; but unlike them all, it has its noblest application to the grandest and remotest works of creation.

The Telescope, says the North British Review, was never invented. A Dutch spectacle maker stumbled upon it, when accident threw two of his lenses into an influential position. It was a divine gift, which God gave to man in the last era of his cycle, to place before him and beside him new worlds and systems of worlds, to foreshow the future sovereignties of his vast empire—the bright abode of disembodied spirits and the final dwelling of saints that have suffered, and of sages that have been truly wise. With such evidences of his power, and such manifestation of his glory, can we disavow his Ambassador, disdain his message, or disobey his commands?

In looking back upon what the Telescope has accomplished—in reckoning the thousands of celestial bodies which have been detected and surveyed—in reflecting on the vast depths of either which have been sounded, and on the extensive fields of sidereal matter out of which worlds and systems of worlds are forming and to be formed—can we doubt it to be the Divine plan, that man shall yet discover the whole scheme of the visible universe, and that it is his individual duty, as well as the highest prerogative of his order, to expound its mysteries, and to develope laws? Over the invisible world he has received no commission to reign, and into its secrets he has no authority to pry. It is over the material and the visible that he has to sway the intellectual sceptre. It is among the structures of organic and inorganic life, that his functions of combination and analysis are to be chiefly exercised. Nor is this a task unworthy of his genius or unconnected with his destiny. Placed upon a globe already formed, and constituting part of a system already complete, he can scarcely trace either in the solid masses around him, or in the forms and movements of the planets, any of those secondary causes by which these bodies have been shaped and launched on their journey. But in the distant heavens, where creation seems to be ever active, where vast distance gives us the vision of huge magnitudes, and where extended operations are actually going on, we may study the cosmogony of our system, and mark, even during the brief space of human life, the formation of a planet in the consolidation of the nebulous rays that surround it. Such is the knowledge which man has yet to acquire; such the lesson which he has to teach his species. How much to be prized is the intellectual faculty by which such a work is to be performed. How wonderful the process by which the human brain, in its casket of bone, can alone establish such remote and transcendental truths. A soul so capacious, and ordained for such an enterprise, cannot be otherwise than immortal.

LITERARY NOTICES.

Holden's Dollar Magazine, for March has made its appearance, well illustrated and filled with a choice combination of original matter. Taken altogether this is one of the most sterling publications ever offered for public patronage, and the very small price for which it is furnished per year, makes it an inducement for all to become patrons. Every article evinces the sound judgment and discrimination of its enterprising publisher. Terms, $1 per year.

W. H. Deitz, New York, Publisher.

Illuminated Waverly Novels.—We have received from Messrs. Hewit, Tillotson & Co., No. 59 Beekman st, N. Y., No. 2 of their superb edition of these novels. It contains the Bride of Lammermoor, beautifully illustrated by ten engravings, executed in the very highest style of the art. Mr. Hewit presents in these specimens the incontrovertable proof that he stands at the head of the engraving profession. The text is clear and excellent, while the style of the publication evinces the most exquisite taste. We should advise all who intend to get Scott's works not to let this opportunity pass, if they wish to secure an elegant copy.

Specimens of the Stone, Iron, and Wood Bridges, Viaducts, &c., of the United States, Rail Roads, &c. By George Duggan, Arch't and C. E. Part 2, containing the conclusion of the article on the "Utica and Syracuse R. R.," and plans, elevations, &c., of the celebrated Cascade bridge, near Lanesboro', on the N. Y. and Erie R. R., and plans, sections, elevations, &c., of bridges of 120 and 173 feet span over the Chicopee River, near Willimansett, on the Connecticut River Rail Road, is now ready. N.B. As this work is publishing by subscription, those wishing to possess it should lose no time in forwarding their names, with a remittance of $5, to Munn & Co. at the office of the Scientific American, who will forward it regularly each month as published to subscribers.

Banker's Magazine for February. Boston: J. Smith Homans, publisher, No. 111 Washington street. This valuable work contains papers of great interest to all business men, and should receive a large patronage. The essays on Exchange are worth the whole subscription price.

Minifie's Drawing Book.—The first edition of this great work was disposed of in a short time, and the second is now ready, for sale at this office. The author has improved its appearance very much, while the matter stands far above any similar work ever published. Price $3.

"Philip Moreton, the Poor Gunsmith, or Circumstantial Evidence," by Frank Worthington. This very entertaining work is published in Boston, by R. B. Fitts & Co., 22 School-st., and for sale by booksellers generally.