THE

Scientific American.

MUNN & COMPANY, Editors & Proprietors.

PUBLISHED WEEKLY AT

NO. 37 PARK ROW (PARK BUILDING), NEW YORK.

O. D. MUNN, S. H. WALES, A. E. BEACH.

☞ "The American News Company," agents, 121 Nassau street, New York.

☞ Messrs. Sampson Low, Son & Co., Booksellers, 47 Ludgate Hill London, England, are the Agents to receive European subscriptions or advertisements for the SCIENTIFIC AMERICAN. Orders sent to them will be promptly attended to.

VOL. XI. NO. 4....[NEW SERIES.]....*Twentieth Year.*

NEW YORK, SATURDAY, JULY 23, 1864.

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(Illustrations are indicated by an asterisk.)

VERSATILITY AND SKILL OF AMERICAN MECHANICS.

A recent paragraph in a contemporary asserted that mechanics in this country were slovenly in their execution and that they only half-learned their trades; as a consequence, the credit of manufacturers and of the nation suffered. The originator of this slander could have had little acquaintance and no sympathy with our working-men. If he had circulated among them as we have been with them in their workshops, their homes and places of amusement—if he had identified himself with their feelings, and thoroughly understood their characters, he would have thought twice before publishing his untruthful assertions, or, better still, erased them before the ink was dry upon the paper. He would have stifled the slander in its birth, before sending it out to prejudice us among other nations, all too ready to disparage everything American.

The assertion is not true. American workmen are, at home certainly, notorious for their skill, thoroughness and versatility. They are fertile of resource, quick to foresee difficulties and avoid them, and the record of the Patent Office is the fullest proof that they are untiring and incessant in their efforts to improve themselves. And not this alone, but to regenerate society, in one sense, by increasing and cheapening the product of labor.

In any machine shop, we shall find men who can work at the vise, the lathe, planer, slotting-machine, shaper, foot-lathe, screw-cutter, boring-mill or gear-cutting engine, with skill and exactness, and who could transfer themselves from a machine they knew by heart, so to speak, and run another on wholly different principles after two minutes' inspection—men who can make a lathe or a knitting-machine, a steam-engine or a plow-share, and who not only know how to use tools, but also make them, and can forge and temper sufficiently well for all practical purposes.

A Jack-of-all-trades is master of none, but such men are not "Jacks," they are masters of their *own* trade, and know it from *alpha* to *omega*. Army officers—those educated at West Point, for example—have had occasion to test the truth of these assertions severely, and railroads that have been cut, or captured, have been put in running order in a few hours notwithstanding the efforts of the rebels to disable them by carrying off important parts of the machinery.

Captured blockade-runners are taken in charge by our acting engineers, and brought home without delay, despite the fact that the engines are new to our men. Those persons who innocently suppose steam-engines are all alike cannot appreciate the care, anxiety, and responsibility which attends the prize-engineer in bringing a strange vessel home; but we do, and have often wondered that these men have been so uniformly successful in their efforts.

Go into any cabinet-maker's shop in the country and ask to have a small pattern made for the foundry, and there is no doubt but that the piece will be obtained, and of first-rate workmanship; yet cabinet-making and pattern-making are widely different trades. Our mechanics in small towns will execute any job, from putting up a building to repairing an obstinate pump, and whole communities depend upon one man sometimes to supply their necessities in this respect.

To return to the machine shop again. Contracts to do different parts of steam-engines, or sewing-machines are eagerly sought for by our workmen. How well they are executed let the machines and the demand for them answer.

It is needless to pursue the subject further. Those who honor and respect labor, who deem the workman worthy, not only of his hire, but of sympathy, esteem and encouragement, will leave no effort untried to elevate him in public estimation, or defend him from the aspersions of ignorant or malignant (because ignorant) individuals.

MOLASSES.

Every one of our readers has probably observed the hygroscopic property of molasses. When molasses candy is first made it is dry and brittle, but if it lies a few hours exposed to the air it becomes soft, sticky, and limber; this results from its hygroscopic property—its affinity for water—its absorption of moisture from the atmosphere. When the little cakes, called ginger snaps, are taken from the oven, they cannot be bent without breaking, but in the course of a day the molasses which they contain absorbs so much water from the air as to make them moist and soft.

It is possible that a valuable patent might be secured for some mode of protecting sticks of molasses candy from the action of the atmosphere, and thus preserving them in their dry and brittle condition. Perhaps a thin coating of gum-arabic, or other edible gum, might answer the purpose.

Molasses is used in the making of printer's rollers, its hygroscopic property preventing the rollers from drying. It is probable that if more general attention was called to this property of molasses, many other applications might be found for the substance. For instance could not a small proportion of it be used in the composition of sculptors' clay, to prevent the great labor and care required in keeping the clay moist while the artists are forming their models?

In the laboratory the substances most frequently employed to absorb water are the chloride of calcium, quicklime, and sulphuric acid, all of which are highly hygroscopic. Quick-lime is also used in distilling to extract from the alcohol a portion of the water which cannot be separated by the process of distillation.

FINANCIERING.

There is an impression, almost amounting to a superstition, that financiering is a difficult and mysterious art. It is, in truth, the simplest of all the departments of commerce. Laying aside all technical terms, financiering is nothing more than the art of borrowing money. There are but two steps in the transaction; the first is to find some person with money to lend, who is satisfied with your securities; and the second is to agree upon the rate of interest.

The poor washerwoman who "spouts" one of her kettles at the pawnbroker's goes through both steps of financiering, and the process is no simpler than that of the merchant who has a note discounted at the bank. If the washerwoman pawns the clothes of one of her customers, trusting to redeeming them by pawning the clothes of the next customer, she makes an operation which is very closely parallel to that most mysterious of all financial operations—"kite-flying."

General Jackson remarked, that "men who do business on borrowed capital ought to fail." Though this hard-hearted maxim has been denounced beyond measure, it certainly has the sanction of Providence, for they nearly all do fail. The statistics of General Dearborn show that out of every hundred men who do a credit business, ninety-seven become bankrupt. Famous financiers are especially certain to fail. We never knew one, from Nicholas Biddle down, who did not finally run out. The really shrewd and thrifty men, such as A. T. Stewart and James Gordon Bennett, never have any occasion to borrow money—to financier. Financiering is simple—and they are simple who practice it.

MAKE HASTE SLOWLY.

There is an old Latin proverb (*Festina lente*) which says, "hasten slowly." It is rarely that we find two words which express so much or contain more food for thought. As a nation we make haste too fast, and should do better to go much slower and more surely to our goal. Some individuals manifest this disposition to hurry over important things differently from others, but the application of the fault alluded to may be understood by the following illustration:—Suppose a person to require information upon some subject he is comparatively ignorant of—the steam engine indicator, for instance; having procured a book upon it, he runs his eye over page after page, touching first upon this example, now upon that, until he arrives at the end, when he knows nothing whatever of the subject. The first time he undertakes to converse upon the instrument or to apply its principles practically, he discovers his ignorance, and is put to shame or inconvenience. All this is wholly the fault of making haste to reach the end, without grasping the fundamental principle and mastering it, and each detail also, before going further. It is absurd to suppose that any matter worthy of study can be mastered in a cursory examination, yet very many persons relinquish the pursuit of knowledge in despair from this very cause. Finding it impossible to comprehend in fifteen minutes some point it has taken an author as many days, and weeks, probably, to settle, they deem the matter beyond their comprehension, and throw up the study never to return to it.

There may be some gifted spirits to whom the knotty points of a new theory or the intricacies of an unfamiliar science, are clear and plain at first sight, but the mass acquire knowledge only by patient study, not by a hand-gallop through the fields of learning.

When sensible men go abroad to acquire information in foreign countries they do not take express trains and steamboats, and whirl onward to the end, but staff in hand they penetrate into village and hamlet, and learn from the peasant and the prince. So it is with those who study to learn and retain what they read. Patient plodding by the wayside is better than running from pillar to post, and the truth of this assertion is manifest to all who have ever given the subject attention.

APPEARANCE OF THE SUN FROM THE NORTH POLE.

To a person standing at the north pole the sun appears to sweep horizontally around the sky every twenty-four hours without any perceptible variation during its circuit in its distance from the horizon. On the 21st of June it is 23° 28′ above the horizon, a little more than one-fourth of the distance to the zenith, the highest point that it ever reaches. From this altitude it slowly descends, its track being represented by a spiral or screw with a very fine thread, and in the course of three months it worms its way down to the horizon, which it reaches on the 23d of September. On this day it slowly sweeps around the sky with its face half hidden below the icy sea. It still continues to descend, and after it has entirely disappeared it is still so near the horizon that it carries a bright twilight around the heavens in its daily circuit. As the sun sinks lower and lower, this twilight gradually grows fainter till it fades away. On the 20th of December the sun is 23° 28′ below the horizon, and this is the midnight of the dark winter of the pole. From this date the sun begins to ascend, and after a time his return is heralded by a faint dawn which circles slowly around the horizon, completing its circuit every twenty-four hours. This