

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.

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

Contents:

(Illustrations are indicated by an asterisk.)

*Flautist's Self-setting Trap.....	15	Telegraphing in Bad Weather..	20
Cuban Machine Agency.....	15	Cartridges in Cold Weather..	21
J. A. Miller's Drying Kiln.....	15	Why Coal-mining Machines	21
One-horse Mowing Machine.....	15	are not Used.....	21
Unparalleled Success.....	15	Trials of a Patent.....	21
The Great Improvements of the	15	More than Satisfied.....	21
Past Nine Years.....	16	Russia.....	21
The Best Way to Make Brass	16	A New Blow-pipe.....	21
Recent American Patents.....	17	Great Profit from Chemical	21
Manufacturing Items.....	17	Refuse.....	21
*Tubos.....	17	*Jones's Railroad Chair.....	22
*Broughton's Gage Cock.....	18	*Van Anden's American Mower	22
Another Pneumatic Railway in	18	A New Developer for Photo-	22
London.....	18	graphic Negatives.....	22
Farmers' Club.....	19	The Lost Arts.....	23
A Singular Statement.....	19	Action of Fluxes.....	23
Notes and Queries.....	20	Special Notices.....	23
Tempering Mill Picks.....	20	Market for the Month.....	23
Proportion of the Weight to the	20	Patent Claims.....	24, 25, 26, 27
Wings of Birds.....	20	*Chapman's Self-feeding	30
A Lead Ball Sustained by a	20	Ratchet Wheel.....	30
Steam Jet.....	20	*Tabor's Double-faced Sad	30
Corrosion of Electro-plated	20	Iron.....	30
Articles.....	20		

VOL. XIII. NO. 2... [NEW SERIES.]... Twentieth Year.

NEW YORK, SATURDAY, JULY 8, 1865.

THE LOST ARTS.

Because certain moldy and ill-smelling mummies have been resurrected from the Pyramids of Egypt and found covered with fine linen—because the tombs wherein they have lain for centuries are covered with caricatures of beasts, birds and fishes—because uncouth and ungainly ornaments of gold are found deposited in such tombs—divers persons wander off into extravagant praises of the lost arts, of the subtle and ingenious artisans who lived thousands of years ago, ignoring the wonders of to-day and the skill of their own countrymen.

If the mummies be an evidence of the taste of the ancients, the less said the better. Ugly in their lives, embalmed they are not improved, and the scarabeus or beetle with which persons of high rank were ornamented is suggestive of another more unpleasant insect quite familiar to housekeepers. Even the pyramids from whence these musty relics of the past are exhumed, might have been built in half the time by modern artificers, with brown stone fronts, if desirable, and slated with alternate rows of purple and green tiles. What a waste of Egyptian time and money they represent!

So also with that Sphinx which glowers at Ethiopia from its seat in the sand, as if suffering from the recollection of some overpowering wrong. If it be a lost art to construct such hideous monstrosities as these, let us congratulate ourselves that the world has grown wiser and better with the lapse of centuries.

Herculaneum and Pompeii, unearthed from the ashes of Vesuvius, show little or no trace of the arts which have been lost. A few bronze lamps of uncouth shapes, some pottery remarkable for its curious decoration, some tiles and frescoes of unquestionable character and tendency—these are some relics of the state of the arts among that people at the time they were overwhelmed.

In Morocco and in Spain, ruins tumbling into decay, courts wherein fountains tinkled through the night atmosphere heavy with the scents of orange grooves, tessellated pavements, and columns fretted with intricate designs, are the only signs, the only evidence to build on that the arts ever existed. Arts, not in the sense of gingerbread finery and gilding, but arts by which whole villages earned bread for their families in the sweat of their faces.

In Egypt at this day—land of the pyramids, of the ruined cities, of the crypts wherein musty princes molder into powder—the wretched native cracks his wheat in a stone mortar, or, worse, in a rag bruised between two stones. In Italy and in Imperial Rome—famous, in centuries long since transpired, for all that wealth could procure—the beggars chatter impor-

tunately at every step, and the fields are as barren and infertile as they were hundreds of years ago.

It is not on the wide Campagna that the modern reaper or a Yankee mower gets an opportunity to exhibit its qualities. It is not on the slopes at the foot of the Alps that the soil is turned up to the sun by cultivators and corn plows. No! mechanism is tabooed! The arts have no chance, and the way of centuries is the way of to-day.

Though the existence of oil lakes was known to the ancients, no use was made of them. Fish oil gave forth its feeble glimmer in their lamps for years, and the solar radiance of kerosene was strange to domestic circles. In like manner the want of knowledge of natural products, of the infinite combinations they are capable of, of the use they may be put to, were almost unknown to the ancients—utterly so, compared to the knowledge of the present day.

There was, indeed, no lack of sensuous decoration for palaces, there was no want of stimulants, no absence of anything that appealed to the grosser nature of man in those ancient days, but the artisans were familiar with only the rudest of mechanical contrivances.

No hundred thousand spindles whirred in cotton factories from morning till night, no engines moved swiftly and noiselessly, no railroads clasped the land in their embrace. The earth bore in its bosom then, as now, copper and iron, but for want of artisans, for want of the skill and cunning to work it, little benefit accrued to the possessors thereof. Brass could be put to no better use than making a huge image to straddle the strait at Rhodes.

In the ancient days lived Praxelites, Phidias and Apelles, sculptors of rare talent, who cut from the silent marble statues that seemed instinct with life; but these, however they may have appealed to the taste of men at that time, never helped the poor to a decent living, put no garments on the naked, nor built up towns and cities as does the machinery of to-day.

For all that cultivates society, for all that tends to make mankind refined, intellectual and human, we have the fullest respect and appreciation, but we despise that affectation which accords to barbarians, or nations semi-civilized, more culture, more genius and more mechanical skill than we possess at the present time. The world moves forward, not backward, and the generations of to-day are wiser than those which are not, ever were. The arts, in a generic sense, are not those delicate refinements of painting and music by which, white-handed and gifted sons of genius get a living, but they are those stern, hard realities in life which, by the practice of them, turns the intractable iron stone into ductile metal, which level the fens, which turn the wilderness into cities, which open up lands unknown to the pent-up thousands of old countries.

These are the arts and this is the period in which they flourish.

ACTION OF FLUXES.

A flux is a substance which will dissolve a metallic oxide, and will not dissolve the simple metal. Fluxes are employed in two operations.

If a quantity of shot and salt be mixed together in a bowl, the shot will remain scattered through the mixture separate from each other, but if the salt is dissolved by the addition of a sufficient quantity of water, the shot will all collect together at the bottom of the bowl. In the same way, when iron is reduced from the ore in a smelting furnace, it is in small globules or masses, that are held separate from each other and supported by a mass of silica and other infusible substances, which were mingled with the ore. If we bring lime in contact with the silica, the two combine together and become glass, which is melted by the heat of the furnace, and thus allows the small masses of molten iron to sink down through it to the bottom of the furnace. This is the use of a flux in reducing metals.

The other operation in which fluxes are employed is the welding or joining of two metals, or two pieces of metal, together. In this case the flux is employed to dissolve the thin coating of oxide from the surface of one or both metals, in order that they may come into actual contact. Iron has a very strong affinity for oxygen, especially at high temperatures. If two pieces of iron are heated for welding, as they are taken from the fire into the atmosphere, they imme-

diately become coated with a thin film of oxide of iron, which prevents them from welding together; but if a little borax is sprinkled over the ends to be joined, it dissolves this film of oxide, which in the liquid state is squeezed out under the action of the hammer, and the surfaces of pure metal are brought in contact.

This article was suggested by the process of tinning copper sheets which was witnessed at John Trageser's Steam Copper Works, at No. 60 Greene street, in this city. A sheet of copper was first pickled for about two hours in a bath of dilute sulphuric acid, and was then placed on the level surface of a mass of brickwork, in the middle of which was a neat little charcoal fire. The workman pushed the sheet over the fire, and then placed upon its upper surface a small plate of block tin, which was soon melted. As the tin was about to melt, the workman dusted the surface of the copper with salammoniac, to remove any film of oxide of copper either remaining from the action of the pickle, or which might have formed after the sheet was taken from the bath.

In none of the cases does the flux act to melt the metal at any lower temperature, or to render it more fluid, but it permits the metal to flow more freely by removing obstructions from its path.

SPECIAL NOTICES.

Elijah Whiten, of Hingham, Mass., has petitioned for the extension of a patent granted to him on the 30th of September, 1851, for an improvement in sawing volutes.

Parties wishing to oppose the above extension must appear and show cause on the 11th day of September next, at 12 o'clock, M., when the petition will be heard.

Jacob Sendeff of Philadelphia, Pa., has petitioned for the extension of a patent granted to him on the 13th of January, 1852, for an improvement in metallic heddles.

Parties wishing to oppose the above extension must appear and show cause on the 25th day of December next, at 12 o'clock, M., when the petition will be heard.

Robert Marcher, West Farms, N. Y., has petitioned for the extension of a patent granted to him on the 21st day of October, 1851, and reissued March 15, 1859, for an improvement in machinery for enameling moldings, etc.

Parties wishing to oppose the above extension must appear and show cause on the 2d day of October next, at 12 o'clock, M., when the petition will be heard.

Mary Manny, executrix of the estate of John H. Manny, deceased, of Rockford, Ill., has petitioned for the extension of a patent granted to him on the 23d of September, 1851, and reissued on the 22d of December, 1854, for an improvement in harvesters, (Five cases.)

Parties wishing to oppose the above extensions must appear and show cause on the 23d of September next, at 12 o'clock, M., when the petition will be heard.

MARKET FOR THE MONTH.

The fluctuations in gold and other values during the last month have been less than usual, and less than can be generally expected, so long as our currency remains in its present inflated condition. The dry-goods trade has been active, and stocks are sold out more closely perhaps than ever before. It will be seen by the annexed list that prices of staples were pretty near the same at the beginning and end of June:

	Price May 31.	Price June 28.
Coal (Anth.) 2,000 lb.....	\$9 00	\$8 50 @ 10 00
Coffee (Java) 33 @.....	36	24 @ 25
Copper (Am. Ingot) 30 @.....	30	29 @ 30
Cotton (middling) 51 @.....	51	50
Flour (State) 6 @ 95.....	\$5 85 @ 6 95	\$5 20 @ 6 15
Wheat 1 90 @ 2 20.....	1 90 @ 2 20	1 70 @ 2 15
Hay 100 lb.....	1 00	1 00
Hemp (Am. dr's'd) 260 00 @ 270 00.....	260 00 @ 270 00	260 00 @ 270 00
Hides (city slaughter) 8 @ 9 1/2.....	8 @ 9 1/2	7 1/2 @ 9
India-rubber 46 @ 75.....	46 @ 75	47 @ 70
Lead (Am.) 8 25 @ 8 50.....	8 25 @ 8 50	9 75 @ 10 00
Nails 100 lb.....	5 50 @ 5 75	5 00 @ 5 25
Petroleum (crude) 35 1/2 @ 36.....	35 1/2 @ 36	35 1/2
Beef (mess) 10 00 @ 18 00.....	10 00 @ 18 00	10 00 @ 16 00
Saltpeter 25 @.....	25	24
Steel (Am. cast) 21 @ 22.....	21 @ 22	13 @ 22
Sugar (brown) 9 1/2 @ 15.....	9 1/2 @ 15	9 1/2 @ 15 1/2
Wool (American Saxony fleece) 75 @ 77.....	75 @ 77	75 @ 77
Zinc 12 @ 12 1/2.....	12 @ 12 1/2	12 @ 12 1/2
Gold.....	1 37	1 37
Interest (loans on call) 6 @ 7.....	6 @ 7	4 @ 6