

The Progress of our Country—Dr. Nott.

In the last number of the Sci. Am. we mentioned that the venerable Dr. Nott, President of Union College, Schenectady, N. Y., had made a very thrilling address on the fiftieth anniversary of his Presidency, July the 25th, ult.

Dr. Nott is one of our oldest and most successful American inventors. The following extracts from his speech will repay perusal:

"Fifty years ago, having been invested with the supervision of Union College, I stood for the first time on yonder rising ground where the College edifices are now seen. These grounds, now so symmetrical and ornate, were then mere pasture ground, scarred with deep ravines difficult of access, by swamp and sand-hill, and divided into different compartments indicative of different ownerships. There was no tree, shrub, nor garden, nor building.—Some thirty students, scattered over the then village of Schenectady, met at a cabinet-maker's, on the corner of Union and Ferry sts.—and these then constituted the whole of Union College. A stinted provision had previously been made for academic instruction—for the masses here. Nor, fifty years ago, was the provision for trade and travel more abundant.—Chemistry was then little known; the motive power of steam less. The application of electricity and the sunbeam to any practical purpose were entirely unknown. By the power of muscle and of wind the internal commerce of the country was conducted. A visit to Albany, fifteen miles, and the return through the intervening desert, over the winding pathway, required the time of three days, to New York often three weeks, to Buffalo six; a voyage to Whitesboro' was executed by the oar or the setting-pole, and took more time and involved greater dangers than a voyage across the Atlantic does at this day. Rome was then the great commercial capital of the West. Beyond it commerce, except with savages, was unknown. The plowshare of the husbandman had scarcely disturbed the soil, or the ax of the woodman assailed the forest; the wild West was a desert for wild men. Even in the older States the wild beast and savage lingered; in all of them the husbandman by the use of the plow, the scythe, and the sickle, worked to replenish his garner, and the spinning-wheel converted flax into raiment. Now, how changed! The hand-wheel and the hand-loom have been exchanged for the power-loom and the spinning-jenny. The setting-pole and the oar are laid aside, and the steam-engine has been substituted. Nor this alone; human labor is constantly disappearing, and, in a thousand ways, processes are now carried on by steam, which, fifty years ago, were performed by the human hand, and this only. Meantime, artificial channels had been excavated round the Falls of the Mohawk, the Mud-on, the Niagara, and the St. Mary, connecting the waters of the lakes with the ocean. Villages have sprung up, a numerous population has appeared, and from them the hum of busy industry is heard. Nor does the speed of steam satisfy the demands of an eager population; the lightning has been trained to convey tidings from friend to friend at any intervening distance. Light, too, has been put in harness, and has learned to do the bidding of man; the artist, indeed, still bends over his easel and slowly lays on the colors which complete his work, but art has deserted his studio, and now, in an instant, by the impress of the sunbeam, her end is attained! This substitution is more than a substitution of elemental for muscular power—it is an increase of power itself; and a perfection and rapidity have been attained which never could have been reached by the power of man or brute, however applied or extended. Hence the great increase of comforts and capital which we witness. The mere day-laborer is better clad and lodged than were the aristocracy of England three hundred years ago. Meantime, emigration in its western flow has been carrying with it arts and sciences, English common-law and the Christian religion, from the Atlantic to the shores of the Pacific Ocean. What has, in so short time, produced such wondrous results? Mind: educated, religious, Christian mind. This is the land of Bibles and of liberty, and the land of liberty because it is the land

of Bibles. The world over, where the Bible is read, man is free, and where it is not, oppression reigns. Time was when freedom of opinion was the prerogative of governments, when the masses were required to believe and think as the ruling power taught, and to believe in its teaching; and to compel this obedience the rack, the gibbet, and the torture were applied. To escape this tyranny our pilgrim fathers fled to savage shores and forest wilds, and their successful resistance formed a new era. Individual opinions became everywhere apparent; these congregated, and formed public opinion; and this, brought into action, became an element of nations, and grew into a governing principle of the world. At present it is but in its infancy; but when it is enlightened by science, sanctified by grace, the voice of power shall no longer come down from usurped palaces of the people, but go up from the people to the seat of Government.—Within this half century, public schools have gone forth to elevate these masses; Church and State have been separated in all the States, and now the books of nature and grace lie open, without note or comment, free to all to read. During the same half century, the educational system has been revised and liberalized, as well as extended. We have escaped many of the vices which arbitrary power induces.—Our energies and enterprise have been so well called into action as to enable us to begin the reform necessary to the new world, and also to co-operate in the renovation of the old. Our discoveries on the shores of the Pacific will soon place in our hands the capital sufficient for the great work that is to be done; the leisure, the result of our mechanical skill, will aid, and thus we shall soon have the opportunity of carrying to the further shores of that ocean, and to shores beyond it, the blessings God has given us in charge. The rapidity with which capital is accumulated is now great.—Look at Britain. It is not her armies nor her navies that make her what she is, but her steam-engines, her machinery, and her coal fields. This republic, ere reaching manhood, is become the competitor of England, and we see what has been done. When such are the results of imperfect experiments, what may not be expected from perfected experiments? In the factory, in the field, science will teach new labor-saving methods, new modes of increase of material wealth. And oh! what may not be expected in the changed condition of man, when, by the supervision and guidance of the elements of nature, his physical wants shall be provided for! When this shall come to pass, (as it will, in the providence of God,) how much valuable time will be redeemed from toil for the cultivation of the intellect, for the enjoyment of the affections, and for the worship of the adorable Being who reigns in Heaven! Then it will only remain to spread the Bible, to unclasp its pages, to make this earth what Heaven is, and what God proposes it shall one day be—when not alone the empires on the shores of the Pacific, but empires beyond, and the isles of the ocean, and all that dwell on the planet, shall be ransomed and redeemed. You my dear pupils, being called by the providence of God to aid in the advancement and approach of this holy and happy future, will, each of you, buckle on his armor and prepare for the good work you have to do. Go into the world and do well, each of you, his allotted part.—Enter the sick room and administer the remedy which removes pain or disappoints death for a period; defend the wronged at the bar; administer justice from the bench, enter the Senate-chamber, and there speak and act for your country's rights and those alone; smooth party asperities; awaken a more undivided zeal among members of the church; and as the best of all and the highest of all, venerate and inculcate religion; teach it as the key to all art and all sciences; as that which sanctifies all and with which all harmonize. There is a mistake on this point too prevalent. Science and religion are falsely supposed to be at war. Oh! truth is no less truth when taught by the sunbeams above or the fossiliferous rocks below, than when inscribed on parchment or chiseled in marble. God's infinity reaches beyond the furthest scope of all sciences; no matter

how small the atom in its approach to nothingness which the microscope can detect, nothing is too small for God to see. Let man turn whither he may, to what part of the heavens or of the earth that he can, and the voice of God comes home to the ear of man. God is here, and here, and here. The worlds which God made, and which he governs, are surely text books for man to study, and it is the fool, and not the wise man, who says—there is no God. It is as puerile and absurd to base our rocks as to hang our hopes, on nothing! My pupils, study nature, and you will find her teachings every where the same. The same pencil that gave their hues to the lilies of the valley, now paints the roses in the vale of Tempe. Never feel that the temple devoted to science is sacred to her, until it is sacred to religion."

TO CORRESPONDENTS.

O. M., of Ohio.—There is no novelty in your right and left jack-screw for lifting buildings, &c. There is already a patent for the same thing.

C. A., of Pa.—You will be perfectly safe in making and using the article, as the patent has expired.—There is no patent for making air tight canvas that we are aware of, but the india rubber cloth is treated according to patented processes.

S. W. Jr., of C. W.—We fail to discover the slightest novelty in your trace buckle.

L. B., of N. Y.—We think your invention is practicable, and to us it seems new and useful. Would advise you to send a drawing of it to the office for further examination. Your remarks about the necessity of such a regulation upon our ocean steamers is correct.

H. S., of Ky.—Your invention appears to us a valuable one, and so far as we know, it is entirely new and patentable. For sandy roads we think it would take the place of plank.

S. & C.—Your letters patent came duly to hand, we will attend to getting up engravings and publish them in their turn.

T. F., of Mich.—Your inventions are both impracticable. Save your money and reputation by keeping silent on your inventions, unless you can devise something better. We don't think it would be for your interest, or ours either, to publish engravings of your inventions.

S. F., of Mich.—The manner you propose for applying the pressure of fluids to a soda fountain cannot be regarded as possessing a patentable feature. The change of use is not the proper subject of patent.

J. R. V., of Chester.—Wagon brakes are well known, which possess the self-operating features. In mountainous districts it is not uncommon to find them so arranged as to commence breaking as soon as the road begins to descend.

E. R., of La.—The device you describe for denoting the stopping places or railroad stations, is not new.—The same thing is perfectly well understood in this section.

E. A. R., of N. Y.—Persons frequently send us advertisements for the sale of "practical receipts." If we advertise them it is not understood that we at the same time stand sponsors for their goodness. Such stuff is usually not worth buying, but sometimes, no doubt, practical men sell their experience to others, which is all right. You had better first find out the character of the advertiser before investing your money for receipts which may prove valueless.

A. F. B., of Ct.—Your ideas in regard to super-heating steam are not new, as you will perceive by reference to an article in another column.

A. F. G., of Pa.—Your improvement in steam brakes does not appear to possess any novel feature. Stephenson's English brake embodies all that could be claimed as essential. The improvement in shuttle boxes for power looms appears to be a new thing, and we advise you to send us a model.

A. N. N., of Ind.—Your alleged improvement in Rotary Steam Engines, is different from anything with which we are acquainted, and we think it embraces novelty of a patentable character. We cannot say how it would operate—this is necessarily a question of experiment.

D. W. C. S., of Ill.—A machine for the purpose you specify yours accomplishes, must be very useful. Without a minute description, we cannot give you advice as to its patentability.

D. W. H., of Wis.—There are a number of patents on hemp breaking machines, but which is the best for your purpose we don't know.

G. C. H., of Phila.—Dovetailing machines are very common, and unless your father has got something more novel than we should presume him to have, if he is ignorant of the fact of there being machinery for that purpose, we would recommend him not to apply for a patent. However, we will examine a sketch of his machine if you will send one, and advise you further.

G. H. T., of Mass.—Combining metal wire with hemp in the manufacture of rope and cordage is a very old invention.

J. O. H., of Mo.—Your water wheel is not new in principle, but the manner in which you construct it is somewhat different from anything we have seen. We believe it will not operate well on a large scale. Your experiments with a model would not satisfy us that the plan is feasible.

J. S. L., of N. Y.—We believe your plan is impracticable.

T. O., of Va.—We do not understand what you mean by chromatype picture—"reading right," but if you wish to spoil a picture, you cannot do so easier than by trying to remove well dried printer's ink.

S. M. B., of Boston.—You can very easily try the experiment with the pins. There will be more strain upon the large pins, if the blows struck upon them is proportioned to their size, but not if a like heavy blow is given to each of the small pins, which are more numerous.

E. F. B., of Boston.—We do not believe you could obtain a patent for the substance you speak of, unless it is a new composition of matter.

J. O. R., of Pa.—We do not know anything positive to endorse, in relation to the inks you speak of. We have never used them.

W. R. M., of —.—We have seen the current act upon two wheels combined.

W. W. T., of Boston.—We cannot give you the information asked; perhaps there is no such mortar in existence. We have little confidence in the majority of such notices of discoveries.

T. J. K., of Tenn.—The atmospheric telegraph to which you refer, is patented. It would not be possible for you to work the tubular railroad by all the steam you could raise in 10,000 boilers.

J. R. O., of N. Y.—The weight was equally distributed on the whole length of the bridge.

W. H. P., Ind.—There surely ought to be no difference of opinion about water rising above the level of the dam, how can any person contend that it does.—The level of the water is altered by an increase or decrease of quantity, and so is the level of the dam; these were all the changes we alluded to.

C. O., of Pa.—Water engines are not uncommon. We illustrated one in vol. 8, Sci. Am., and may illustrate two or three in our next volume.

J. P. N., of N. J.—Roman cement will not stand the action of wet and frost, and will not answer the purpose designed by you.

C. S., of Boston.—Your plan of concentrating sulphuric acid, strikes us very favorably, but will there not be some difficulty in obtaining vessels of the proper quality for such a purpose; that is, can you place dependence on all the vessels being made of the proper materials.

W. O., of Boston.—See a letter on another page on the very subject to which you have alluded.

A. B., of N. B.—Your views respecting the origin of the different races of men accord with our views, and you have given us one new idea on the subject. We have received communications on the other side of the question, but we think it best to refrain from opening a discussion which would necessarily become very extended.

J. M., of Wis.—Two wheels will accomplish the object you speak of, just as well as six. The mammoth steamship now building in England is to have six wheels and a stern propeller. The complexity of machinery involved in having six wheels is an objection too serious to their use.

S. T., of Me.—The oil we mentioned in No. 46, is the best of manufactured oils for the purpose stated, so far as we know.

Money received on account of Patent Office business for the week ending Saturday, Aug. 5:—

J. S. R., of Ct., \$30; A. L. F., of Ct., \$30; E. S., of N. Y., \$26; J. B., of N. Y., \$30; A. R., of N. Y., \$30; O. P., of Pa., \$40; A. S., of O., \$30; F. D., of Va., \$210; J. C., of N. Y., \$55; J. C., of O., \$25; G. B. F., of Vt., \$25.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, Aug. 5:—

E. S., of N. Y.; R. K., of Mass.; A. N. N., of Ind.; J. C., of N. Y.; G. B. F., of Vt.; W. W., of N. Y.

LITERARY NOTICES.

THE PRINCETON REVIEW.—This solid Quarterly, for July, is replete with the wealth of literature. It is the organ of the American Presbyterian Church (O. S.) and maintains a high reputation. It has six articles on various subjects, the first being on the "Present State of Oxford University," and the last on the proceedings of the last General Assembly, which was held recently at Buffalo. Of these proceedings no member of this denomination should be ignorant. The Editor is the learned Prof. Hedge, of Princeton, N. J. The office of publication is 265 Chesnut street, Philadelphia.

BLACKWOOD'S MAGAZINE.—This famous Magazine, for July, is just published by Leonard Scott & Co., 78 Fulton street, this city, and is the commencement of a new volume. It contains ten original articles, the leading one being on the growth and prospects of British America. As a treaty of reciprocity in trade, &c., has just been made—and just now confirmed—between Mr. Marcy, our Secretary of State, on the one part, and the Earl of Elgin on the other, in relation to the Provinces of British North America, this article should be read by every citizen who desires to be intelligent on the subject.

THE WESTMINSTER REVIEW.—The last number of this famed English Review, just issued from the press of its enterprising American publishers, Leonard Scott & Co., 78 Fulton street, this city, contains a number of very fine articles, especially those on the Russian Question, and Comte's Positive Philosophy.

PUTNAM.—For August.—The present number of this magazine is illustrated with a steel engraving of Bayard Taylor, dressed "à la Turk," but not very Turkish-like for all. The leading article is on the Smithsonian Institution, and is a very able one. An article on Confucius, the Chinese philosopher, contains much that is exceedingly instructive and interesting. Another on "West Point Cadet Life," deserves to be read by every citizen of our Republic; in short, the whole number is profound, witty, and ably written. Putnam & Co., publishers, this city.

THE NEW YORK JOURNAL.—The August number of this monthly, published by P. D. Orvis, 180 Fulton st., contains some good illustrations. The articles are racy and readable—very pleasant for light summer reading.

THE NEW ENGLANDER.—For August.—This sterling Quarterly, published by F. W. Northrop, of New Haven, Ct., contains eight original articles, of no uncommon excellence; one is a criticism of Lieut. Herndon's Exploration of the Amazon Valley, and assuredly a keen one; "The Early History of Ohio," and "Russia as it is," form the subjects of other two articles.

THE KNICKERBOCKER.—For August.—Old Knick comes to us this month rich with the choice fruitage of literary excellence. The first article is on the Life and Character of William Pitt, the celebrated Prime Minister of George III. It is ably written, and as Pitt was well beloved in America (though hated by British Radicals) it will be read with pleasure by all the admirers of that great man—the friend of the Colonies. All the other articles are good, and the Editor's Table, as usual, "is running over with laughter."

FRANK LESLIE'S LADIES' GAZETTE.—The number of this Magazine of Fashion for August is unusually well illustrated. Fashionable collars, head-dresses, caps, frocks—and everything else, from a pin to a parasol, are illustrated with evident preciseness and grace of execution. This Magazine has no equal in our country in the variety and beauty of its engravings.

NATIONAL MAGAZINE. for August, is a fine number, full of embellishments and interesting articles. Several of our friends are taking this work and speak very highly of it. Carlton & Phillips, publishers, 200 Mulberry st., New York.

HALL'S JOURNAL OF HEALTH.—For August—contains a very elaborate article upon the cholera, and we think it contains more sense than anything which we have read upon the subject this season. The Editor evidently understands whereof he writes. This is a monthly journal of decided ability, edited and published by W. W. Hall, M. D., No. 42 Irving Place, N. Y. Terms \$1.