

Scientific American.

ESTABLISHED 1845.

MUNN & CO., Editors and Proprietors.

PUBLISHED WEEKLY AT

No. 361 BROADWAY, NEW YORK.

O. D. MUNN.

A. E. BEACH.

TERMS FOR THE SCIENTIFIC AMERICAN.

One copy, one year, for the U. S., Canada or Mexico... \$3 00
One copy, six months, for the U. S., Canada or Mexico... 1 50
One copy, one year, to any foreign country... 4 00

MUNN & CO., 361 Broadway, corner of Franklin Street, New York.

The Scientific American Supplement

is a distinct paper from the SCIENTIFIC AMERICAN. THE SUPPLEMENT is issued weekly. Every number contains 16 octavo pages, uniform in size with SCIENTIFIC AMERICAN.

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LA AMERICA CIENTIFICA E INDUSTRIAL (Spanish trade edition of the SCIENTIFIC AMERICAN) is published monthly, uniform in size and typography with the SCIENTIFIC AMERICAN.

MUNN & CO., Publishers, 361 Broadway, New York.

The safest way to remit is by postal order, express money order, draft or bank check. Make all remittances payable to order of MUNN & CO.

NEW YORK, SATURDAY, JANUARY 24, 1891.

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THE CONSTITUTION OF THE KOCH LYMPH DISCLOSED.

The scientific and medical world has been much interested in the announcement by Dr. Koch of the composition of his famous lymph. Conservative as ever in his estimate of its worth, he claims for it distinct value as a reagent for testing the existence of tubercular disease.

The discovery was based on observation of the effects of injection of pure cultivation of tubercle bacilli upon animals affected with tubercles as well as upon animals in good health. A healthy guinea pig thus inoculated dies. The wound caused by the inoculation closes with a sticky matter, shows signs of healing, but after ten days or two weeks a hard nodule appears, which develops into an ulcerating sore, and death ensues.

The next point ascertained referred to the action of the dilute cultivation with killed bacilli. This was found to be practically without action on healthy animals, but of very powerful action on those already affected. The tubercular reaction, which has been observed and described so often, was next discovered. The injected tuberculous animal was killed by a dose that a healthy animal was indifferent to.

Dr. Koch, from his studies, became convinced that the action was due to matter extracted from the dead bacilli. He, therefore, sought for a solvent, and processes for preparing a solution. As solvent he adopted a fifty per cent solution of glycerine. The processes he eventually chose he does not divulge.

The essential constituent he thinks is a derivative of the albuminous bodies. He thinks that it acts by unfitting the bodily tissue from sustaining the life of bacilli. The bacilli are killed in the patient by a product of the dead bodies of their own species, as a man might be killed by a cadaveric alkaloid, and as surgeons are killed by blood poisoning from wounds inflicted while dissecting corpses.

The effective constituent of the lymph can be precipitated by alcohol, and obtained mixed with other matter as a white or colored powder. In the glycerine extract it is estimated to be present in fractions of one per cent. As diluted, the quantity injected is almost inappreciable. Its potency upon affected organisms is far beyond that of the most powerful known drugs, when the infinitesimal amounts added, and the intense reaction produced in the system, is considered.

JARRAH WOOD.

Considerable interest in the utilization of woods grown in the English colonies was awakened by the Colonial and Indian Exhibition of 1886, and this interest seems to have been steadily increasing since that date. The authorities of the Royal Gardens at Kew have recently issued a report on the jarrah timber (Eucalyptus marginata), of which the following are the salient features:

Various species of eucalyptus have been recommended for use in England for outdoor work where strength and durability are specially desired. The freight charges from Australia, where all the species are native, are not heavy, and this is one reason why the wood has not been generally introduced. Another reason is that its intense hardness makes it well nigh impossible to work in with English tools.

forming mainly the forests of these tracts. Baron Mueller, in referring to these woods in his "Report on the Forest Resources of Western Australia," says:

"The wood has attained a world-wide celebrity. When especially selected from hilly localities, cut while the sap is least active, and carefully dried, it proves impervious to the borings of the chelura, teredo, and termites. It is extensively in demand for jetties, piles, railway sleepers, fence posts, and all kind of underground structures, and it is equally important as one of the most durable for the planking and frames of ships.

Vessels constructed of jarrah wood have, after 25 years constant service remained perfectly sound, although not coppered. The wood has been tried at three places in the Suez Canal, at Suez, Port Said, and Ismailia, and after having been down seven years the trial samples were taken up in order that a report might be forwarded to Paris, and the certificate of the resident engineer pronounced the timber to be practically indestructible.

The eucalyptus is of very rapid growth, and the timber, when green, is very easily felled, split, or sawn up, but when dry it becomes very hard. The bark of many of the species abounds in tannin, and has become to some extent an article of commerce. Some of it is said to be twice as strong as oak bark.

CELEBRATION OF THE BEGINNING OF THE SECOND CENTURY OF THE AMERICAN PATENT SYSTEM.

The first century of existence of the American patent system has now been completed. In the history of the country there are to be found few more important epochs or more worthy of being adequately signalized. The inauguration of the patent laws marks the beginning of a career of unprecedented prosperity among nations. It indicates the fostering by the federal power of the most distinctive feature of the national character.

It is hard to believe that those who composed and accepted the constitution of the United States, and those who subsequently amended it, could have foreseen the influence which each paragraph would have on the fortunes of so many millions of people. It is definitely certain that the clauses relating to patents could never have been supposed to embody the foundations of the edifice that has been based upon them.

It is not in the mere granting of letters patent that the fostering arm of the government appears most prominent. Entitled by statute to federal protection by the judiciary, the rights of patentees have formed one of the great subjects of defense by the highest courts of the land.

The highest judges in the land, and those who have obtained the highest reputation as expounders of the law and as interpreters of the intentions of the legislative bodies, have pronounced strongly and unhesitatingly in favor of the inventor. No class of citizens has been the subject of higher encomium from the bench. Those judges who have been most outspoken in their appreciation of the poorly rewarded efforts of mechanical genius have been those who have attained the highest reputation.