CAPTURE OF A LARGE FINBACK WHALE.

We publish herewith a picture of the large whale now on exhibition in this city. It was captured on March 18, two miles off Provincetown Harbor, Cape Cod, by a whaleboat's crew of five fishermen, armed with a bomb-lance and gun. He was purchased from his captors by Swift & Co., of Provincetown, for $600, and towed to this place by the tug Charles Lawrence, requiring four days and nights for the passage. Arrived, the monster was floated on a drydock, and has since been viewed by thousands of people.

The back of the whale is hard and shines like ebony; the belly is white like ivory, and where the two meet at the sides it takes a slaty gray tint.

A series of wrinkles, as if scored by fire, run backward and upward from beneath the jaws like bilge keels on a vessel. The skin beneath the eye is also wrinkled in massive folds. The flesh, where exposed by scars or wounds, is red and firm like beef.

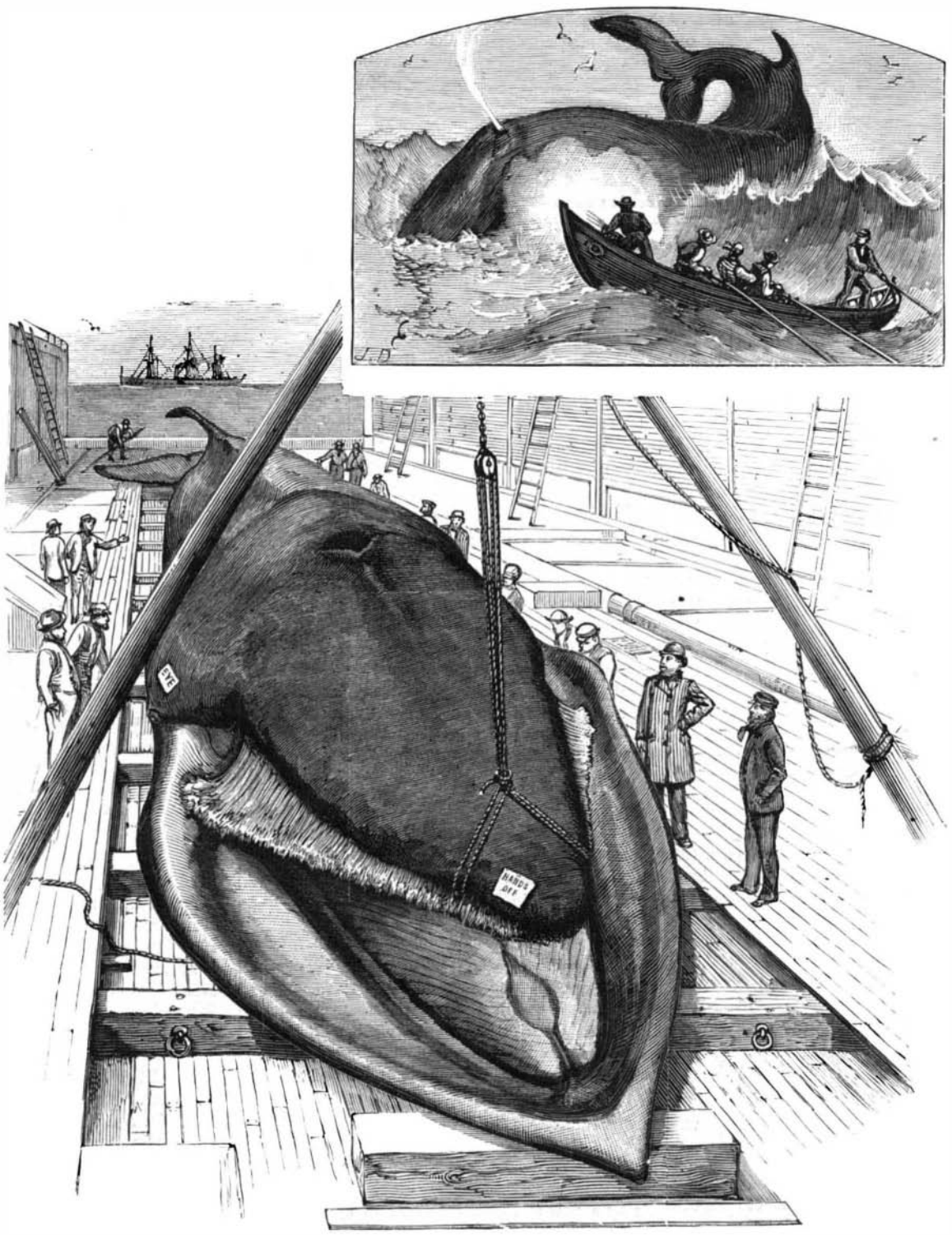
The head forms one quarter of its length. The body is 65 feet long, 15 feet in greatest diameter, and weighs about 70 tons. The eyes are very small, set a few inches back of the jaw socket. The spout hole crowns the summit of the head, 17 feet back from the nose, surrounded by a three-cornered ridge of bone and India rubber-like flesh. The tail is flexible, forked like a broad-arrow head, set sideways to the body, enabling the whale to dive quickly. From behind the eyes project two broad soft fins, and a little one springs from the sharp ridge near the tail, giving it the name finback.

The upper jaw is long, narrow, and concave, the edges smooth and rounded. In place of teeth there extends downward a whalebone formation like the teeth of a huge comb set obliquely, growing in size from a few inches at the nose to three feet or more at the jaw, the whole terminating in a stiff broom-like fringe of bristly hairs.

The lower jaw is entirely smooth, much wider than the upper, the latter fitting down into it like a cover, the bone fringe filling up the groove and serving as a strainer through which the water is expelled after a school of small fry is ingulfed in the maw. The tongue covers the entire inner surface of the lower jaw.

The orifice of the ear is hardly perceptible, yet the hearing is so acute that a ship crossing its track a half mile distant will cause it to dive instantly.

This species of whale is the most dangerous to attack, and the least profitable. It destroys vast numbers of small fish, and is worth only $500 for oil and bone. It fights desperately, and if badly wounded describes a large circle having a "swath," inside of which he makes his last stand, and woe to anything that ventures in. If left alone there he will die quietly, announcing his death by elevating his fins and turning his head toward the setting sun.



CAPTURE OF A LARGE FINBACK WHALE.

The Phylloxera Pest.

To compensate for their discomfort during the past almost unprecedented cold winter, the people of Southern France had hoped that it would result in the killing of the above insect pest, which has for the last few years been so destructive to their grape crop. But from the observations with regard to this made by M. Lichtenstein, he arrives at the lamentable conclusion that the phylloxera has not experienced the least harm from the temperature of ten to eleven degrees below zero. This applies not only to the insects deeply interred, but even to those near the surface. M. Lichtenstein found a number of other pucerons similarly resistent to cold. These little creatures, attached to the aerial parts of the plants which they attack, were completely benumbed and torpid, but after being transferred to the laboratory they proceeded with their hatching operations as if nothing had happened.

The Edible Sea Worm.

There is a very curious food product obtained in the Pacific, which is esteemed as highly as are whitebait in England; it is a small species of sea worm, a genus of annelids, known scientifically as *Palolo viridis*. The following account of it is given by a traveler. These worms are found in some parts of Samoa (Navigator Islands) in the South Pacific Ocean. They come regularly in the months of October and November, during portions of two days in each month, namely, the day before and the day on which the moon is in her last quarter. They appear in much greater numbers on the second than on the first day of their rising, and are only observed for two or three hours in the early part of each morning of their appearance. At the first dawn of day they may be felt by the hand swimming on the surface of the water; and as the day advances their numbers increase, so that by the time the sun has risen, thousands may be observed in a very small space, sporting merrily during their short visit to the surface of the ocean. On the second day they appear at the same time and in a similar manner, but in such countless myriads that the surface of the ocean is covered with them for a considerable extent.

On each day, after sporting for an hour or two, they disappear until the next season, and not one is ever observed during the intervening time. They are found only in certain parts of the islands, generally near the openings of the reefs on portions of the coast on which much fresh water is found; but this is not always the case. In size they may be compared to a very fine straw, and are of various colors and lengths, green, brown, white, and speckled, and in appearance and mode of swimming resemble very small snakes. They are very brittle, and if broken into many pieces, each swims off as if it were an entire worm. The natives are exceedingly fond of them, and calculate with great exactness the time of their appearance, and look forward to it with great interest. The worms are caught in small baskets, beautifully made, and when taken on shore are tied up in leaves in small bundles, and baked. Great quantities are eaten undressed, but either dressed or undressed they are esteemed a great delicacy. Such is the desire to eat "palolo" by all classes that immediately the fishing parties reach the shore, messengers are dispatched in all directions with large quantities to parts of the island in which none appear.

Many of the European residents in the Fijis eat the "palolo," and look on it as quite a periodical relish. It also makes its appearance in the New Hebrides, in Tongo, and in the Samoan or Navigator Islands identically with its advent in Fiji.

The Hittites.

One of the most interesting parts of Chief Justice Daly's annual review of recent progress in geographical exploration, before the Geographical Society, March 23, was that touching the important discovery of the seat of empire of the ancient Hittites. Judge Daly said:

The readers of the Bible will remember the frequent mention that is made of the Hittites, a people occupying Canaan, who are described in the biblical narrative as being commercial and military, and in whose country Abraham bought a piece of land for his burial place. The scattered accounts in the Bible simply indicate an ordinary tribe of people, with whom the Israelites had intercourse, but information derived from the researches made in Egypt and Assyria show that the Hittites, whom the Egyptians called the Kheta and the Assyrians the Khatti, were a powerful confederacy occupying the country which was the highway between Babylonia or Assyria and Egypt —a people actively engaged in commerce, their principal city being a place to which merchants from all parts congregated, and who were at the same time a warlike people, who for a long period kept the Assyrians in check, and who proved the most formidable antagonists the Egyptians ever encountered. They were not only commercial and warlike, but had evidently at a remote period made great advances in civilization and in the fine arts and early Greek art, as found in the discoveries of Dr. Schliemann at Mycenæ; and the early art found in Cyprus by our associate, Mr. Di Cesnola, is supposed to have been largely derived from them.

They occupied the whole country of Southern Syria, from the Mediterranean to the desert, dwelling chiefly in the fertile valleys of the Orentes, a river rising to the east of Baalbec and flowing into the Mediterranean, and had two principal cities—Kadesh, or the Holy City, and a great commercial emporium, which was their capital and the center of their power, called Carchemish. They were finally overthrown by the Assyrians, B. C. 718; and had so completely disappeared that they are scarcely ever referred to by Greek writers. Great interest was felt to discover the site of their commercial capital, Carchemish, and many conjectures have been made, none of which, however, could be verified. A few years ago Mr. Skene, the British Consul at Aleppo, discovered a huge mound of earth covering a large area on the western shore of the lower Euphrates, near a ford of that river on the route still traversed by caravans. This great mound was surrounded by ruined walls and broken towers, while the mound itself was but a mass of earth, fragments of masonry, and *débris*. It had frequently been seen by previous travelers, but they identified it with other lost places. Mr. Skene called the attention of the late George Smith, the eminent archæologist who brought so much to light from the ruins of Nineveh, to this mound, and Mr. Smith found here the long-lost capital of the Hittites. The present British Consul, Mr. Henderson, has been during the last two years engaged in the exploration of the mound, and has already sent important remains with inscriptions to the British Museum.

A few years ago a stone which had formed part of the wall of a house at Hamath had an inscription upon it which excited great curiosity, because it was neither Assyrian nor Egyptian, but something between both languages. It may be remembered that I called attention in one of my former addresses to the discovery of this stone and one or two others containing like characters, which were then called the Hamath inscriptions, with the suggestion that this might probably be the language of the Hittites, which is now proved to be the fact. The inscriptions found by Mr. Henderson in the exploration of Carchemish are not only of the same character, but the same language which Mr. Layard found impressed upon seals discovered by him in the ruins of the record chamber of Sennacherib's palace, and which greatly excited his curiosity, as the writing was unlike any ever noticed before. Another inscription was afterward discovered at Aleppo, by Mr. Davis, a missionary; and it also turns out that the famous figures sculptured above the roads from Ephesus to Phocea, and from Smyrna to Sardis, which are mentioned by Herodotus, and were supposed by him to represent the Egyptian King Rameses II., the Sesostris of the Greeks, had inscriptions in the same character as that recently found in Carchemish, showing that these figures also are Hittite monuments. It is supposed that this language was the source of what is known as the Cypriote syllabary, found in Cyprus, and which was probably the language in use among commercial people throughout Asia Minor until it was superseded by the simpler and more practical Phœnician alphabet. This discovery is exceedingly interesting, as the Hittites belong to the same race of people who perfected, by the invention of the alphabet, that greatest of human inventions, a written language. We have now, in this discovery of Mr Smith, the memorials of a lost people, in neighboring proximity to the Phœnicians, of whom also we know so little—a people who had an important part in the early progress of ancient civilization, with respect to which an eminent Egyptian scholar expresses his conviction that future discoveries in the course of this exploration will afford convincing proofs that this civilization, which was of the highest antiquity, was of an importance which we can only guess at.

A writer in the London *Times* has said, in respect to these discoveries, that they have opened up to us an extinct civilization that existed before Rome or Athens was founded, of which nearly every trace and memorial had been lost until these discoveries were made a few years ago; that they have opened a new and earlier page in the history of mankind—in that of religion, science, and of the arts—by the discovery of the remains of this library, which Abraham may have consulted in what was the land of his nativity.

Fishes on the Pacific Coast.

At a recent meeting of the California Academy of Sciences, Professor Jordan, of the United States Fish Commission, said that the labors of himself and associates have, as yet, been principally confined to the waters of San Diego, San Pedro, and Santa Barbara. Among the specimens of fish examined were the European shark, of which little has been heard on this coast, but it is taken by thousands in Los Angeles waters for the oil. Mr. Jordan here exhibited a specimen of the true sole, the only one yet found on the Pacific coast. The fish sold in our markets as soles are different kinds of flounders. The one shown was picked up in the Chinatown of Los Angeles. Of the flounders, two new species have been found. One was caught just outside the Golden Gate, and is evidently the young of a species that grows to a large size. The only other specimens of the species known were found in Greenland. Another flounder was of the halibut form. Other new forms were found of the sting ray. It was found off San Diego, and is of the European genus. Another ray, caught off Santa Barbara, belongs to the Chinese genus. This is only another evidence that fishes of the same genera are common to both sides of the Pacific, and, as the speaker facetiously remarked, "forming another link between California and China." It is almost as easy, said Mr. Jordan, to find new genera as new species on this coast. Several sharks, about three feet long, were found off Santa Barbara, which have the peculiar faculty of inflating themselves with air when caught, until they are two-thirds as broad as they are long. This has only been known before by specimens brought from Van Diemen's Land. To the eleven species of rock cod, seven more have been added. Most of the new species are of a bright red color. Another new species of surf fish or perch was found in the San Francisco market.

A Wasp's Strategy.

Mr. Seth Green says that one morning, when he was watching a spider's nest, a mud wasp alighted within an inch or two of the nest, on the side opposite the opening Creeping noiselessly around toward the entrance to the nest, the wasp stopped a little short of it, and for a moment remained perfectly quiet. Then reaching out one of his antennæ, he wriggled it before the opening and withdrew it. This overture had the desired effect, for the boss of the nest, as large a spider as one ordinarily sees, came out to see what was wrong and to set it to rights. No sooner had the spider emerged to that point at which he was at the worst disadvantage, than the wasp, with a quick movement, thrust his sting into the body of his foe, killing him easily and almost instantly. The experiment was repeated on the part of the wasp, and when there was no response from the inside he became satisfied, probably, that he held the fort. At all events, he proceeded to enter the nest and slaughter the young spiders, which were afterward lugged off one at a time.

Decision on an Injector Patent.

March 10, 1880, Judge Wheeler, of the United States Circuit Court for the Southern District of New York, rendered a decision in a case in which Nathan & Dreyfus, proprietors of James Gresham's patent (No. 57,057) for "a supplementary jet-lifting apparatus for injectors," sued the New York Elevated Railroad and Wm. L. Chase for an infringement of that patent. The injector which they claimed to be an infringement was that known as the "Little Giant Injector," made and sold by the Rue Manufacturing Company, of Philadelphia. This suit was brought in 1876. The court sustained the validity of the Gresham patent, found that the "Little Giant" injectors complained of were an infringement of that patent, and granted an injunction and referred the subject for an accounting of the damages. Nathan & Dreyfus now give notice that lifting injectors of this pattern are infringements of their patent, and announce that they will settle for such infringements on reasonable terms with all users who respond promptly, and without litigation.

RECENT DECISIONS RELATING TO PATENTS, ETC.

U. S. Circuit Court.—Eastern District of Wisconsin.

GOTTFRIED *et al. vs.* THE PHILLIP BEST BREWING COMPANY *et al.*—IMPROVEMENT IN PITCHING BARRELS, PATENTED MAY 3, 1864.

[It is not often that so many interesting questions are involved and decided in a single case as in the following.]

JOINT INVENTION.

1. To overthrow the presumption of joint invention raised by the filing of a joint application upon a joint oath the evidence must be clear and unequivocal.

2. Joint invention is the result of mutual contributions of the parties; and if one suggests an idea in a general way and the other falls in with it, and by his aid develops and gives definite practical embodiment to it, the two may be considered joint inventors.

A LICENSEE FOR A PARTICULAR MACHINE CANNOT SUBSTITUTE THEREFOR A NEW MACHINE.

3. The defendants claimed to be licensees under the patent by reason of a purchase from one of the inventors of a machine used by him; but it appearing that said machine was subsequently torn down and afterward rebuilt of substantially a new construction, it was held that the identity of the original machine was thereby destroyed, and the evidence did not disclose such facts as to show that the patentees had expressly or impliedly given to the defendants license or permission to use such machine.

SIMPLICITY AND ECONOMY OF CONSTRUCTION ARE SUFFICIENT TO SUPPORT A PATENT.

4. The patent law protects simplicity and economy of construction as against prior complex and expensive combinations; and although the general and abstract effect may be analogous, if the two mechanisms produce their respective results by essentially different processes, the one being more simple and capable of being operated with greater economy than the other, it is not anticipated thereby.

REQUISITES OF SUCCESSFUL PRIORITY.

5. A prior patent or publication, to anticipate a patent, must appear in the description to embody substantially the same organized mechanism, operating substantially in the same manner as that described in the patent claimed to have been anticipated.

THE NEW ARRANGEMENT OF OLD DEVICES MAY BE PATENTED.

6. Old instruments placed in new and different organizations, producing in such situation different results, or the some results by a new and different mode of operation, do no prevent such newly-organized mechanism from being patentable.

TO OVERTHROW A PATENT THE ALLEGED PRIOR DEVICE MUST BE PERFECTED AND PRACTICAL.

7 To justify the court in overthrowing a patent granted for what appears to be a new and useful invention or improvement, on the ground that the device has been anticipated by another and earlier invention, the court should be well satisfied by clear and credible testimony that the alleged earlier invention actually existed; that it was a perfected device capable of practical use; that it was embodied in distinct form and carried into operation as a complete thing, and was not of such character as to entitle it only to be regarded as an unperfected or abandoned experiment.

8. A rude machine constructed for the purpose of experiment, and subsequently broken up, deserted, and abandoned, cannot be regarded as such a perfected invention as will defeat a patent

NEW COMBINATIONS OF OLD PARTS ARE PATENTABLE.

9. Although the various elements or parts of the patented mechanism, when separately considered, may be regarded as old, they are to be viewed in the light in which they have been combined in connection with the new and useful results which the combination accomplishes.

THE CLAIMS ARE TO BE EXPLAINED BY THE SPECIFICATIONS.

10 A claim to "the application of heated air under blast to the interior of casks by means substantially as described and for the purposes set forth," embraces the particular means and mode of operation described in the specification.

11. Claims containing words referring back to the specification must be construed in the light of the explanations contained in the specification.

12. It is sufficient for the purpose of distinguishing old parts from new in the specification and claims of a patent to describe each and all of the parts, and claim the mechanism as a whole, so constructed and operated as to produce the result set forth.

MECHANICAL INVENTIONS.

An improvement in axle boxes which will prevent the oil or grease from flowing out of the box, and will prevent sand from entering it, has been patented by Mr. Irving F. Burdick, of North Stonington, Conn.

An improved hay press has recently been patented by Mr. Beverly Tompkins, of St. Albans, West Virginia. This invention is an improvement on the hay press, for which application for patent was allowed to the same inventor June 13, 1879. It consists of a novel arrangement of levers for operating the traverser and follower of the press.

A harrow that can be readily adjusted for light or heavy work, be made to accommodate itself to uneven ground, and be moved anywhere without being taken to pieces, has been patented by Mr. William W. Cook, of Kansas Centre, Kan.

Diamond Making.

The London *Photographic News* sums up briefly the result of diamond making as follows: A hydrocarbon gas—such as marsh gas, for instance, which is composed of hydrogen and carbon—is put into a stout iron tube of considerable thickness. A nitrogen compound—presumably cyanogen—is also introduced, with a view to the nitrogen combining with the hydrogen, and leaving the carbon free, for a diamond, as our readers are aware, consists of pure crystallized carbon. The gas in the iron tube is subjected to enormous pressure to liquefy it, the tube being heated to aid in this work. The liquefaction of oxygen by Pictet, of Geneva, was effected by pressure in this way. The pure carbon passes under pressure from a gaseous into a liquid form, and finally crystallizes, in which condition it is found upon the iron tube being opened. The diamonds are, however, of the most minute character, and Mr. Hannay, of Glasgow, who has thus succeeded in making them, frankly owns that the game is not worth the candle.

When Trout May be Caught.

The *Sea World*, a sprightly little paper devoted to the fish interests, published at New Haven, Conn., gives the following information regarding the laws of different States in respect to trout fishing:

California, April 1 to November 1.
Connecticut, April 1 to July 1.
Iowa, February 1 to November 1.
Maine, May 1 to October 1.
Massachusetts, April 1 to October 1.
Michigan, May 1 to September 1.
Minnesota, April 1 to October 1.
New Hampshire, May 1 to October 1.
New Jersey, March 1 to October 1.
New York, April 1 to September 1.
North Carolina, January 1 to October 15.
Pennsylvania, April 1 to August 1.
Province of Ontario, Canada, May 1 to September 15.
Province of Quebec, Canada, February 1 to October 1.
Rhode Island, March 1 to August 15.
Vermont, May 1 to September 1.
Virginia, April 1 to September 15.
Wisconsin, April 15 to September 15.

Total Solar Eclipses.

According to Professor Davidson, of San Francisco, the most important total solar eclipses during the present century will be as follows:

Date. Year.	Date. Month.	Most favorable locality for observation.	Duration of Totality.
1882	May 17	Arabia	2 min. 00 sec.
1883	May 6	Marquesas Islands	5 min. 15 sec.
1885	Sept. 9	New Zealand	2 min. 00 sec.
1886	Aug 29.	West Africa	6 min. 21 sec.
1887	Aug. 19.	Russia	3 min. 40 sec.
1889	Dec. 22	Angola, West Africa	3 min. 34 sec.
1893	April 16	Brazil	4 min. 44 sec.

The next total solar eclipse visible near the United States will be that of May 28, 1900, at 3 o'clock in the afternoon; wherein the central line of totality passes through Mexico, the Azores, and Egypt

Water Cresses.

At a recent meeting of the Royal Horticultural Society of England, Mr. Shirley Hibberd exhibited a lot of home-grown water cresses, which created considerable interest among the members. The display consisted of a series of pans, fifteen inches in diameter, each filled with a luxurious growth of tender cresses. The exhibitor claims that the pan culture of water cresses may be profitably pursued with the aid of a frame or cool plant house during the severest winter weather. The cresses shown were produced in the course of six weeks, and had been daily gathered for the table, thus showing how rapidly and prolific they grow. According to the testimony of Mr. Hibberd any one may supply his table with this wholesome and delicious salad any time of year without much trouble or expense.