

**Trade Mark Difficulties.**

The new English trade mark law makes it incumbent on the customs authorities to stop the import and also the export of any goods which they think bear wrongful trade marks. The officials have been carrying out their duties with such a high hand as to occasion loss and inconvenience to merchants. A large public meeting was lately held in London with a view to measures for the amendment of the act. All sorts of well known names, it appears, are registered in England as trade marks, and consequently almost any species of goods made by outsiders is liable to be seized by the customs for infringement.

Several amusing instances were cited of goods being stopped by the customs, including a consignment of bacon from America, because the boxes, though bearing the name of the town whence they came, were branded "mild cured;" a package of albums, because the word "album" (it was said) was English; and a case of thermometers, because they were marked "Fahrenheit." The following amendment was proposed by Mr. Platnauer and seconded by Mr. Moenich:

"That steps be taken by the Chamber of Commerce to influence the treasury to permanently remove the petty restriction placed by the custom house officials in the way of the equitable operation of the act, without in any way interfering with the trade marks or the resemblance to those marks such as would lead the public to suppose that they were articles of English manufacture."

A FAMILY at Versailles, France, consisting of the parents and two children, were poisoned with conium, which had been used instead of parsley in a dish of vegetables. The patients, being dangerously sick, were taken to the hospital for treatment, and recovered. A variety of conium much resembling parsley grows in all the back yards and gardens in Versailles.

**THE FRENCH EXHIBITION OF 1889.**

The greatest activity now prevails in Paris in respect to the preparation of the buildings for the International Exhibition of 1889, which promises to be by far the most wonderful and interesting industrial assemblage ever brought together. We give, on page 152, a condensed map of the locality, which we find, with some particulars, in *Engineering*; also additional views illustrative

of the great one thousand foot tower, from *Le Monde* and other journals.

M. Georges Berger, the Director-General of the Paris Exhibition of 1889, has issued an official block plan of the buildings and grounds, together with some general information intended especially for the use of foreign exhibitors. Annexed is a copy of the plan referred to, from which it will be seen that the exhibition is contained within one continuous inclosure, comprising:

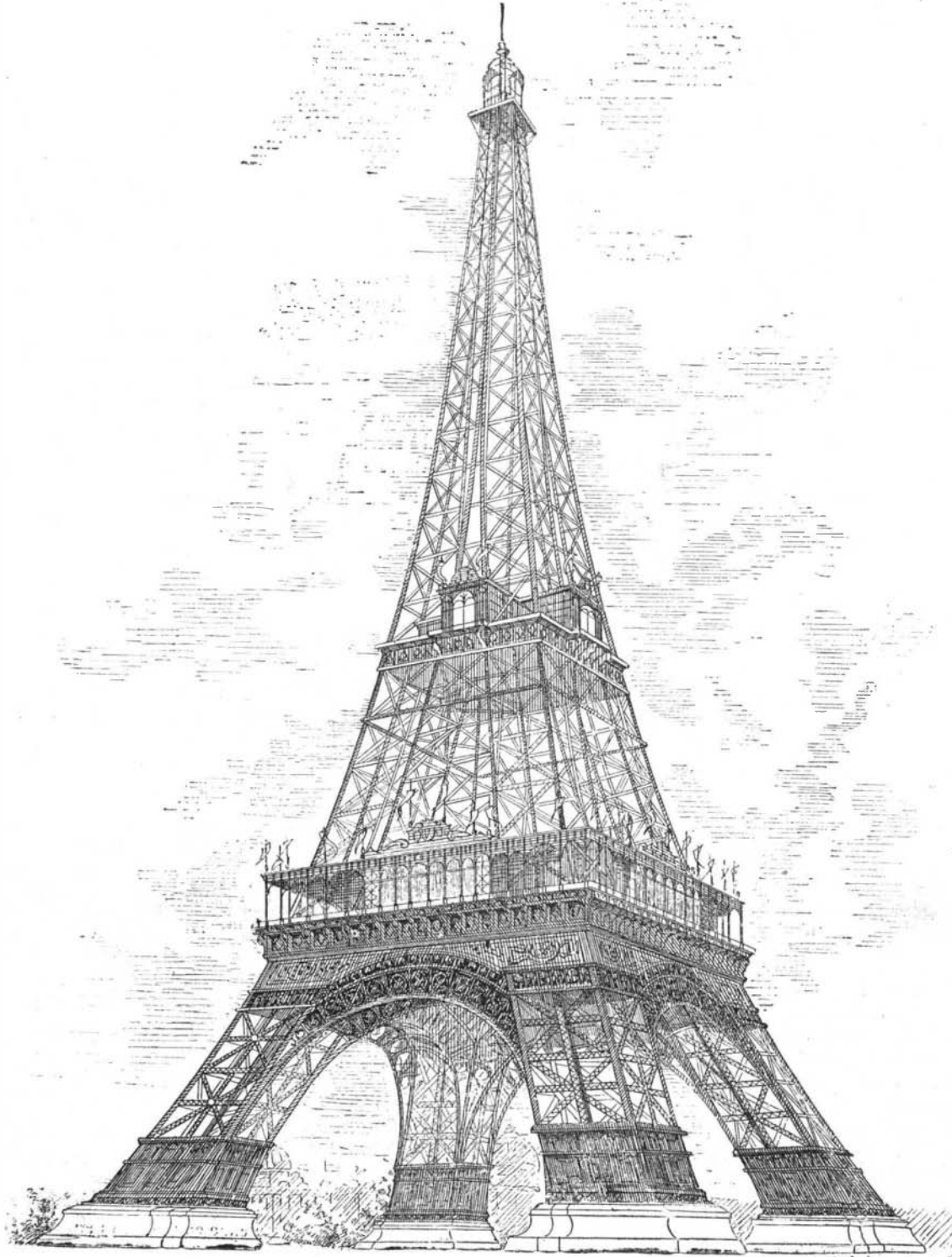
1. On the left side of the Seine: The Champ de Mars and the river quays and banks; the Esplanade of the Invalides and that part of the Quai d'Orsay between the Esplanade and the Champ de Mars.

2. On the right bank of the Seine: The park and certain available portions of the Trocadero Palace. The Pont de Jena, connecting the Trocadero and the Champ de Mars is also included. The exhibition will be divided into four principal parts and nine groups, as follows:

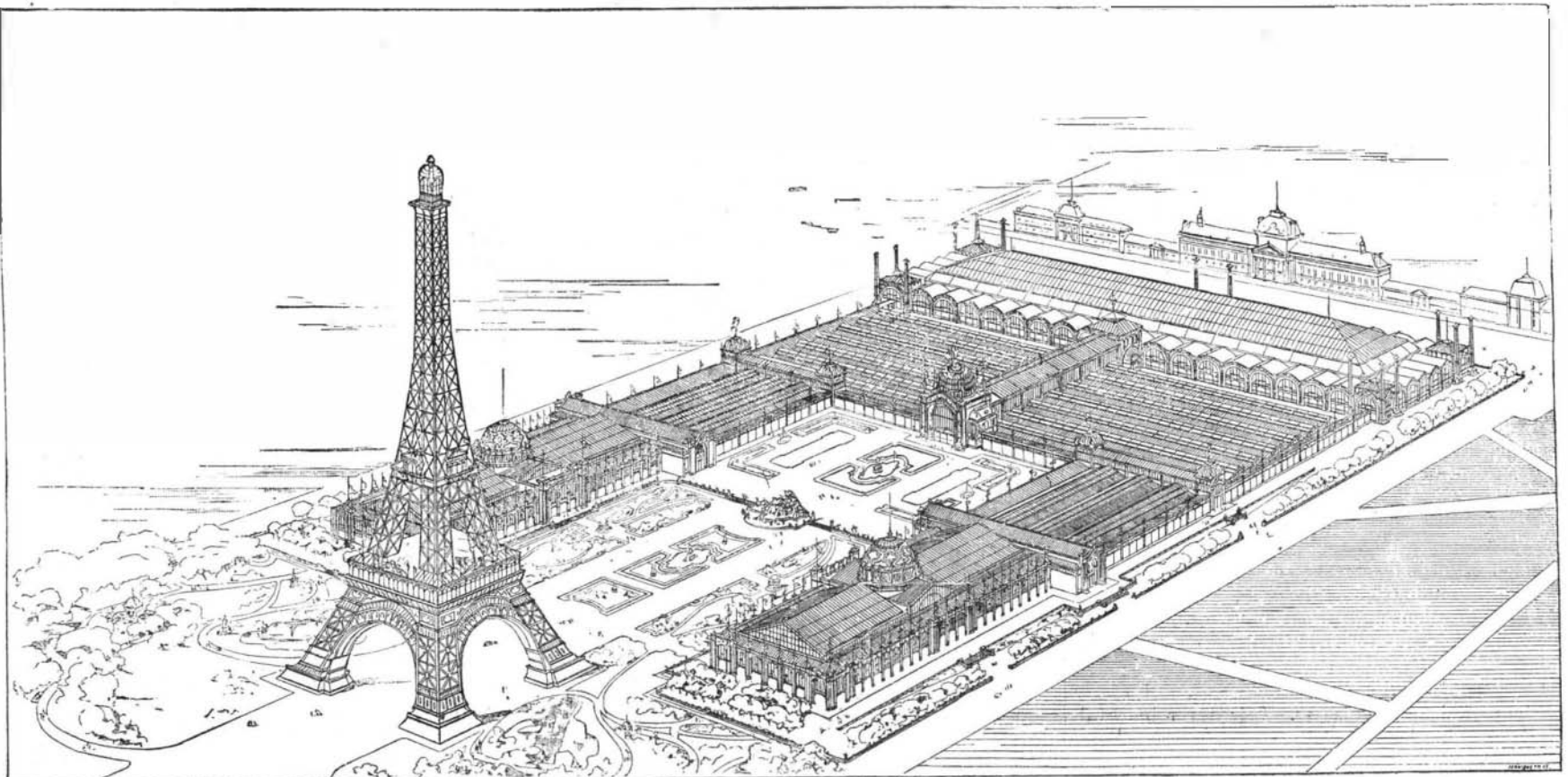
Part I.—The Champ de Mars. (A.) Section I. The Fine Art Buildings: Group 1. Sculpture, paintings, etc. This building will be divided into galleries and groups of galleries, corresponding to the various national exhibits.

Section II. (B.) Liberal Arts: Group 2. Education; materials and processes connected with the liberal arts. This building will comprise a great central nave and galleries, and the space will be divided into two parts, distributed by classes, one for French, the other for foreign exhibits.

Section III. (C.) Gallery of miscellaneous industrial products, comprising: Group 3. Furniture and accessories. Group 4. Fabrics, clothing, and accessories. Group 5. Extractive industries; raw and manufactured products. The area of this gallery—about 100,000 square yards—will be divided into three parts, one being allotted to each group. Each part will be subdivided into two, of which one, reserved for French exhibits, will be divided into



M. HANIN'S PERSPECTIVE OF THE GREAT TOWER.



THE FRENCH EXHIBITION OF 1889—DIAGRAM OF GREAT TOWER AND BUILDINGS.



classes, and the other for foreign exhibitors into nationalities.

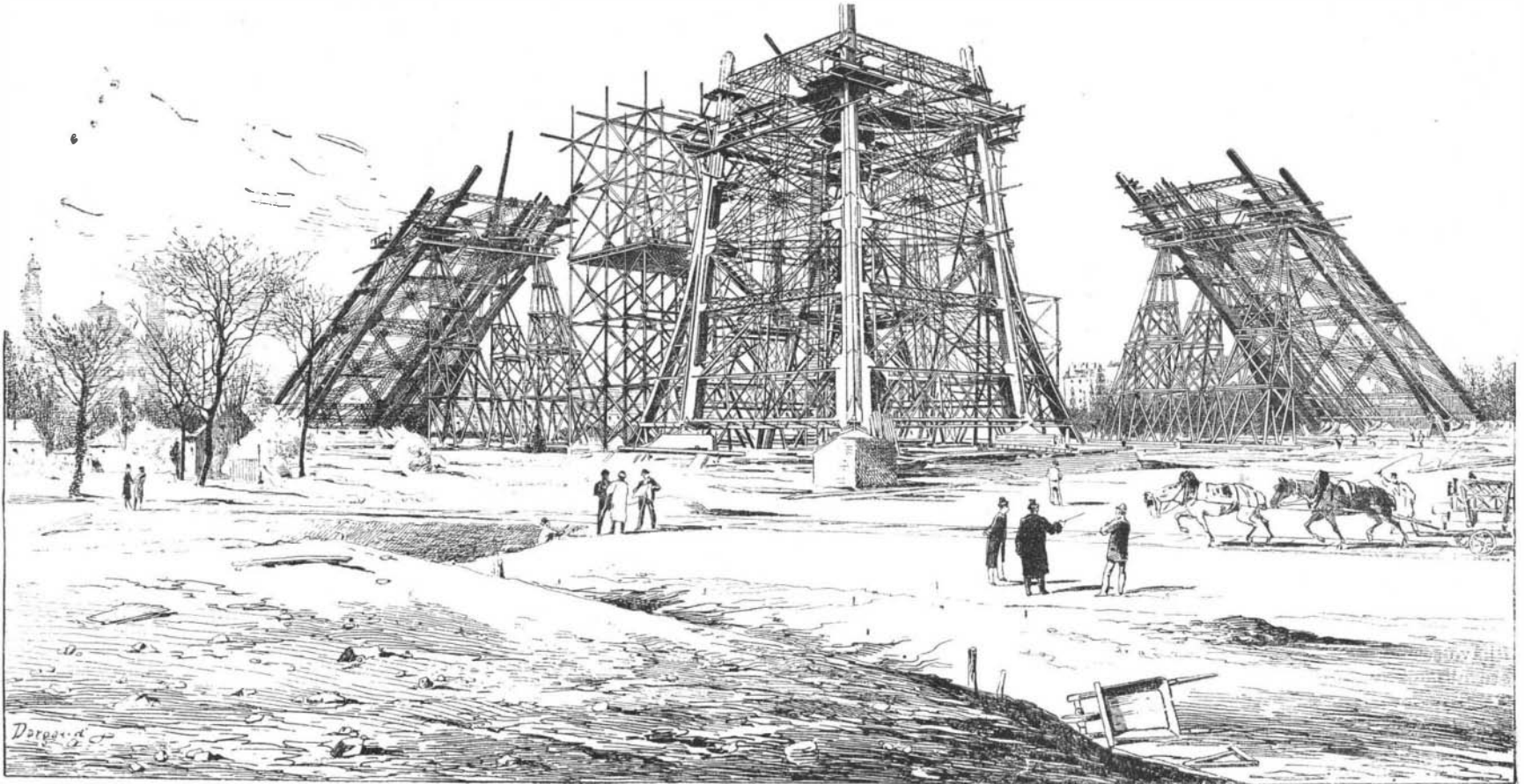
Section IV. (D.) Machine Galleries: Group 6. Machines and processes connected with mechanical industries; electricity. This building will be divided into classified sections, in each of which the similar exhibits of different nationalities will be arranged, as far as the available motive power will permit.

Part IV.—The Trocadero. (K.) International exhibition of horticulture and agriculture, comprised in Group 9, horticulture.

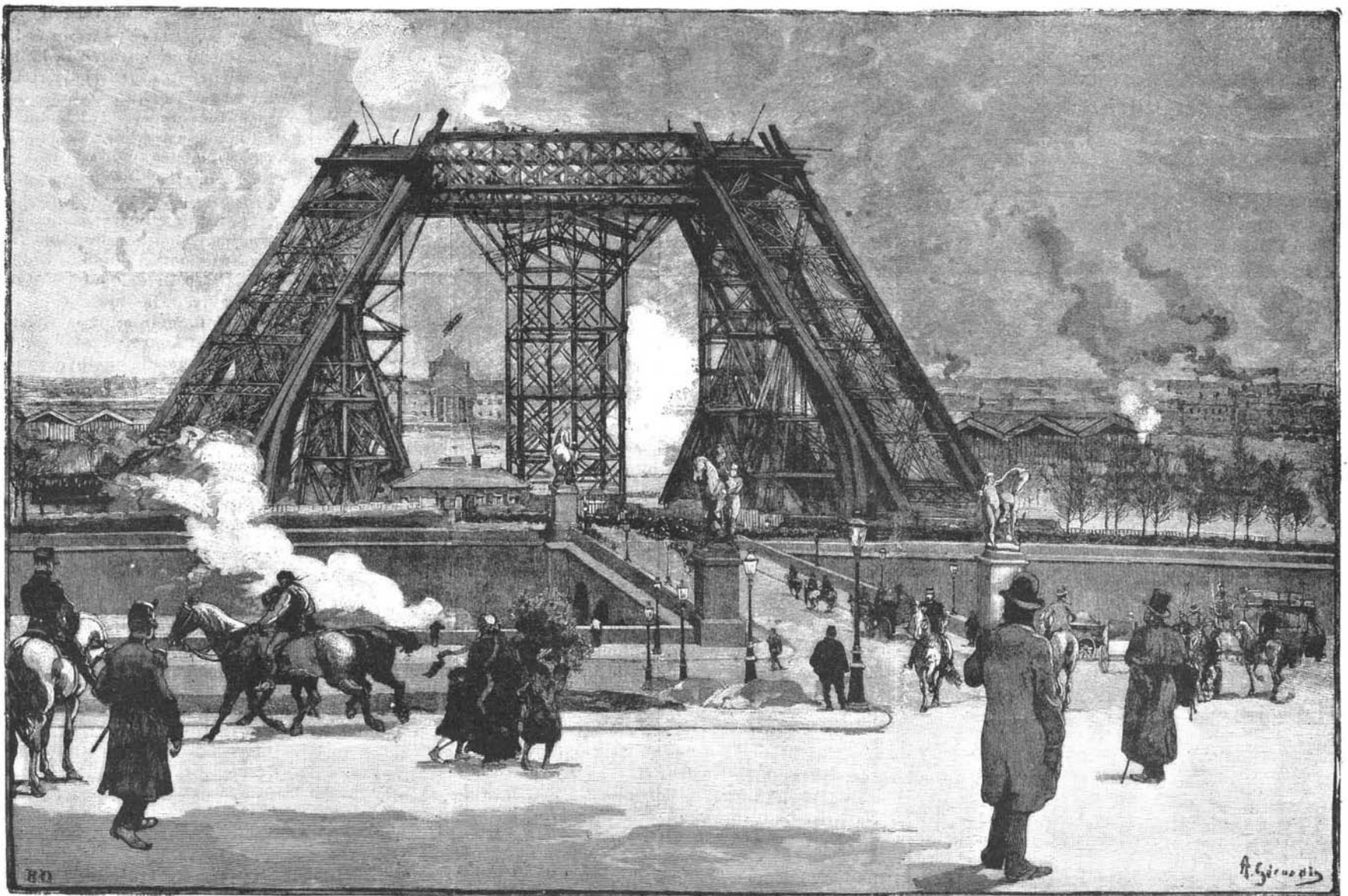
The available spaces allotted to the respective groups for French and foreign exhibitors have been estimated from the statistics of previous great exhibitions. Those of 1867 and 1878, held in Paris, had for their principal feature the construction in the Champ de Mars of a

the great number of exhibits rendered it impossible. By the system adopted for 1889 a methodical order of division has been substituted for the old plan.

The following information will be useful to foreign exhibitors. The administration makes no charge for space, but exhibitors will incur the cost for subdividing such space with the necessary partitions, for flooring, finishing and decorating their allotments, accord-



THE FRENCH EXHIBITION OF 1889—THE INCLINED BASE COLUMNS OF THE GREAT TOWER.



THE FRENCH EXHIBITION OF 1889—PRESENT APPEARANCE OF THE TOWER.

Part II.—The Quaid'Orsay. (E.) Section I. Group 7. Food products. These will be arranged in a building of more than one story, the international exhibits being classified collectively.

Section II. (G.) Agricultural exhibits. Group 8. Agriculture, vine culture, and pisciculture.

Part III.—Esplanade des Invalides. This area will be devoted to the exhibition of trees, etc., and will form an annex to Group 8. Also to miscellaneous exhibits from French colonies, to special exhibits of the French ministries, to social economy, hygiene, etc.

palace, the galleries of which, arranged either circularly or in straight lines, permitted the French and foreign exhibits to be so arranged that visitors could inspect at will all the objects in the same group coming from different nationalities, or all the products of each nationality. This scheme involved for each country the allotment of a special and well defined space. It was very successful in 1867, although the relegation of French and foreign agricultural exhibits to a separate building was a departure from the ruling idea. In 1878 it was intended to follow the practice of 1867, but

ing to general plans furnished by the administration, and of course for installing their exhibits, and also for the service of cleaning and special watchmen. French and foreign contractors will be invited to tender for furnishing the motive power required to drive the machinery in motion. The conditions under which such tenders must be made are already formulated. Arrangements have been made with the French railway companies, the Compagnie Generale Transatlantique, and the Compagnie des Messageries Maritimes, by which the cost of transport on all objects for exhibi-

tion (except works of art and articles of special value) shall be reduced 50 per cent. So far as is possible and under the most economical conditions, the administration will place at the disposal of exhibitors men and appliances for unloading and unpacking cases, as well as for repacking at the close of the exhibition. The exhibition will as usual serve as a bonded warehouse, so that goods exhibited will not be subjected to octroi or other dues, unless they are sold. A general and comprehensive French catalogue will be published, but sectional catalogues may be issued for the exhibits and in the language of each nation taking part in the exhibition.

M. Hanin sends to *La Construction Moderne* the accompanying drawing, as he thinks it will appear, of the great tower, which is to form one of the remarkable objects of the exposition of 1889.

M. Hanin says: "This perspective is taken from the quay at Passy, the spectator being 1,000 ft. from the axis of the tower.

"I have not drawn it in the ordinary manner (intersection of the visual lines on a vertical plan), which has the fault of preserving the geometrical proportions of the height; but I have determined the relative dimensions of the different parts by the usual angle in which they are included, so as to realize as exactly as possible the proportions and aspect which the tower will present to a spectator located as above mentioned.

"The view of the palace of the exposition is determined in the same manner. The scale of my drawing is 0.005 millimeter to a degree, and for my geometrical dimensions I took as a basis the autography of 0.002 per meter as recently published.

"In general, the various perspectives I have seen up to the present time are absolutely false, and certainly tend to form a bad opinion of this work, which I believe, on the contrary, will be very interesting. However, I consider the structure as badly located, for the palace of exposition will be assuredly dwarfed by the presence of this enormous tower in the foreground. I should have preferred to place it on the background, near the Ecole Militaire. The palace of the exposition in the foreground would have been less eclipsed."

#### How to Utilize a Cypress Swamp.

The readers of the *Lumberman* have been made aware that R. G. Peters, of Manistee, and Horace Butters, of Ludington, Mich., were interested in North Carolina cypress, having purchased 100,000 acres of land largely timbered with that kind of wood. Their holdings are in Robeson County, N. C., and to some extent in that part of South Carolina contiguous. The lands are situated west of Lumber River, which runs southward, and enters the sea at Georgetown. The town of Lumberton lies north of the tract. In Robeson County the holdings of the Michigan men are in the Big Swamp, or Great Swamp, as it is locally called, a portion of their property lying in Ashpole Swamp, over the line in South Carolina. Lumber River is a floatable stream, on which logs or lumber can be sent to Georgetown, and thus reach a point of shipment by sea. A railroad coming from the northwest crosses Lumber River and runs to Wilmington, N. C., another seaport. Thus there are two outlets to the sea, one by water and another by rail. Hence it can be seen that the astute Peters did not select this cypress property without reference to facilities for marketing lumber. The timber is described as growing tall and clean, many of the trunks being 80 feet long, without a branch. The trees also stand thickly on the ground. The swamp is not as wet as many on the lower Mississippi.

The owners have devised a great scheme for getting their cypress to mill and market. It is said that the land was acquired for the purpose of employing Butters' steam skidder. However that may be, this appliance for swinging logs from stump to rollway, car, or boat is to be the chief means for placing this North Carolina cypress where it will do the most good.

When the Michigan men had made their purchase, and began to talk about putting in a mill and manufacturing lumber, the natives proceeded to give their advice; which was mainly as to how not to do it. Those nice hospitable people down that way are great on conjuring up difficulties. When Peters and Butters proposed to cut a canal from Lumber River into the swamp by means of dredges, they were informed by the local oracles that it could not be done, for the reason that a dredge could not be got into the swamp. But the thing was done just the same, and now two of these

huge steam shovels are spudding their way through the alluvium, amid cypress trees and stumps, at a mighty rate, and it is proposed to thus dig a channel six miles long to start with. A mill of 150,000 feet capacity will be erected at the point where the Wilmington Railroad crosses Lumber River, the logs to be floated to this mill by means of the canal. It is probable that the output will be railed to Wilmington for shipment to Baltimore, Philadelphia, New York, Boston, or whatever market may be most available.

By means of the steam skidder, placed on barges, logs can be gathered in for a distance of 600 feet each side of the canal. When the timber shall be exhausted along the main ditch, spur canals will be dredged out, and thus more cypress reached. This process will go on until the timber is all cut, and the entire swamp converted from noisome, malarious ooze into cultivable land of the richest kind. Now that the inhabitants are beholding what the Northerners are accomplishing, they are highly pleased, though the results will have gone back on their judgment and prognostications.

If Butters and Peters' enterprise shall prove a complete success, it will be an example of how to get out cypress timber. The great drawback to the cypress industry, when contemplated by Northern men, has been the difficulty of getting logs from the swamps. Such areas are covered with water a large portion of the year, and though overflows have hitherto been the means of floating cypress to the mills, the method is an uncertain one, and renders the mill operator wholly

Doubling on her track, she eluded the dogs, returned to her cubs, and either carried or induced them to follow her into the deeper recesses of the cavern, beyond the dangers of digging and chasing. I have often thought that little piece of strategy a masterly piece of generalship. What could be more natural than to desire to draw away from her young ones the threatening dogs and men? Seeming to know that her own barking would have the desired effect of diverting their attention to larger game in an open field, she ventured to draw their attack upon herself, and succeeded in saving the lives both of herself and her young ones.

#### Communicability of Disease from Animals to Man.

The transmission from the cow to man of scarlet fever and tuberculosis was the subject of the opening address of Prof. Hamilton at Marischal College, Aberdeen, in which the lecturer gave an excellent account of the investigations conducted by Mr. Power and Dr. Klein into the relation of a cow malady to scarlet fever in man. He referred also to the observations of Copland, who believed that both the dog and the horse could suffer from the latter affection, and stated that a febrile condition of some kind can be communicated to animals by inoculating them with the blood of persons who are the subjects of scarlet fever. He further expressed the opinion that tubercle could be conveyed to man by means of milk from tuberculous cows. While the possibility of such occurrence cannot be denied, it must be borne in mind that Klein has pointed out that

there are certain important differences between bovine and human tuberculosis; and again, Creighton has shown that man occasionally suffers from a form of this disease which resembles the bovine malady, making it probable that by far the greater number of cases are not of bovine origin. Nevertheless, the subject deserves much greater investigation, and certainly every effort should be made to prevent the distribution of milk from tuberculous cows.—*Lancet*.

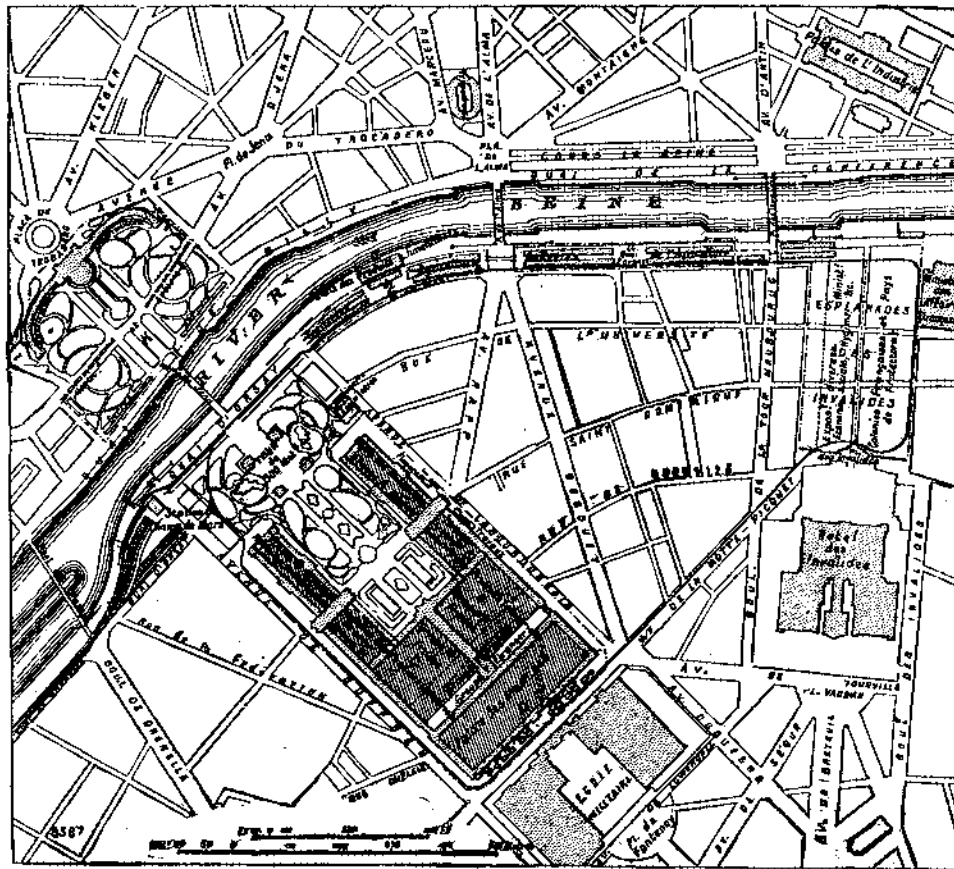
#### A Pneumatic Dynamite Gun for the Italian Government.

Messrs. Wm. H. Cramp & Sons, who are now engaged in building the dynamite cruiser, have received a contract from the Italian government for the construction of a forty foot pneumatic gun. It is to be in three sections and is to throw a 600 lb. shell. It is to be shipped to Spezia for sea coast defense. It is regarded as an experimental order by the Italian authorities. In its construction a number of large tubes are used for storage and firing reservoirs. The tubes were made up of Paxton iron by the American Tube and Iron Co., who were considered as entitled to the work from their success in the construction of the Fort Hamilton plant. Meanwhile, work on the dynamite cruiser

is actively progressing also at the Messrs. Cramp's yard, and America for a time at least will be the possessor of a unique engine of marine warfare. The order from the Italian government proves that Lieut. Zalinski's work is watched by the foreign powers, and is appreciated by them.

#### Glass and China Manufactories.

The advance made in the manufacture of glass and fine china in this country during the last few years is most phenomenal. At Trenton, N. J., and at Pittsburg and its vicinity, and in Ohio, some of the handsomest ware and largest sizes of plate glass sold in this city are the product of our own manufactories. The *Age of Steel*, published at Pittsburg, Pa., says: "There are already two large plate glass works in this country, each of which has a capacity of 225,000 feet of glass per month. These are located at Creighton and Tarentum, respectively, and obtain their supply of natural gas from wells in the vicinity, owned by the company. A third plant of the same kind is being erected by Capt. Ford, who is interested in the first named works, near Kittanning, in the adjoining county of Armstrong. This plant will have a monthly capacity of 500,000 feet, or more than twice the capacity of both the other works. A large plate glass factory was also completed a few months ago at Butler, in the adjoining county of that name. It is said that natural gas enables these companies to make plate glass of a quality superior to any made abroad. It may also be added here that there are some seventy other glass factories in this city and vicinity, which make window glass, table ware, lamps, bar goods, and numberless other varieties of glass goods. Some of these goods are of the finest and most ornate description, and might well be taken for the productions of Bohemia.



THE LOCALITY OF THE FRENCH EXHIBITION OF 1889.

dependent on the caprice of the weather and the will of the darkies who venture into the swamps to cut timber. A Northern operator cannot brook such doubtful conditions. When he goes for logs, he wants to know that there is a reasonable prospect of getting them. Having invested his money in a mill plant, he wants to turn out a certain amount of lumber every year in order to keep business moving. The canal and steam skidder scheme seems to be the one that will solve the cypress problem. It will also be of vast benefit in draining the swamps of the South. Thus the two Michigan gentlemen who have initiated the North Carolina enterprise will be an instrument in the hand of Providence for lifting large areas of the opulent soil of the South out of the slimy waters that have covered them for ages. The process will bring health and wealth to extensive districts that have lain waste, breeding ground for reptiles, malaria, and death.—*Northwestern Lumberman*.

#### Cunning of the Fox.

Dr. J. F. Landrey, in *Popular Science News*, relates the following, showing the wonderful sagacity of the fox:

On the Lower Wabash a company of hunters from Tippecanoe County encamped for the night among the cavernous limestone hills occasionally found in those regions. The hounds soon traced up the retreat of an old gray fox and her family in one of those narrow crevices that probably led into a more open cavern further in. The whining of the young foxes was very distinct, and led to louder bayings of the hounds. The mother, however, was "not at home." But it was not long till her barking was heard beyond the camp, on a small hill in another direction. The dogs soon took the hint, and gave her a magnificent chase around the hill.



**The Origin of Petroleum.**

Professor Medelejef has advanced the theory that petroleum is of mineral origin, and that its production is going on and may continue almost indefinitely. He has succeeded in making it artificially by a similar process to that which he believes is going on in the earth; and experts find it impossible to distinguish between the natural and the manufactured article. His hypothesis is that water finds its way below the crust of the earth, and then meets with carbides of metals (particularly of iron) in a glowing state. The water is decomposed into its constituent gases. The oxygen unites with the iron, while the hydrogen takes up the carbon and ascends to a higher region, where part of it is condensed into mineral oil, and part remains as natural gas, to escape where it can find an outlet, or to remain stored at great pressure until a borehole is put down to provide it a passage to the surface. Oil-bearing strata occur in the vicinity of mountain ranges; and it is supposed that the upheaval of the hills has sufficiently dislocated the strata below to give the water access to depths from which it is ordinarily shut out.

◆◆◆◆◆

**PALLAS' NORTHERN SEA EAGLE.**  
*(Thalassæetus pelagicus.)*

This noble bird is found in Kamschatka, and during Dr. F. H. H. Guillemard's cruise in the Marchesa he made drawings of the same. Our engraving is from his book, and is therefore authentic. It is a magnificent bird, and is especially conspicuous from the large white shoulder patches and tail. It is very shy and difficult of approach.

**Natural History Notes.**

**A Steel Bird's Nest.**—In the city of Soleure, Switzerland, there are quite a number of watch manufactories. According to *Isis*, Mr. Rueder, the owner of one of them, recently discovered on a tree in his garden a wagtail's nest constructed entirely of steel springs, and measuring nearly five inches in length. This nest, which was constructed with admirable skill, has been deposited in the cabinet of natural history of Soleure.

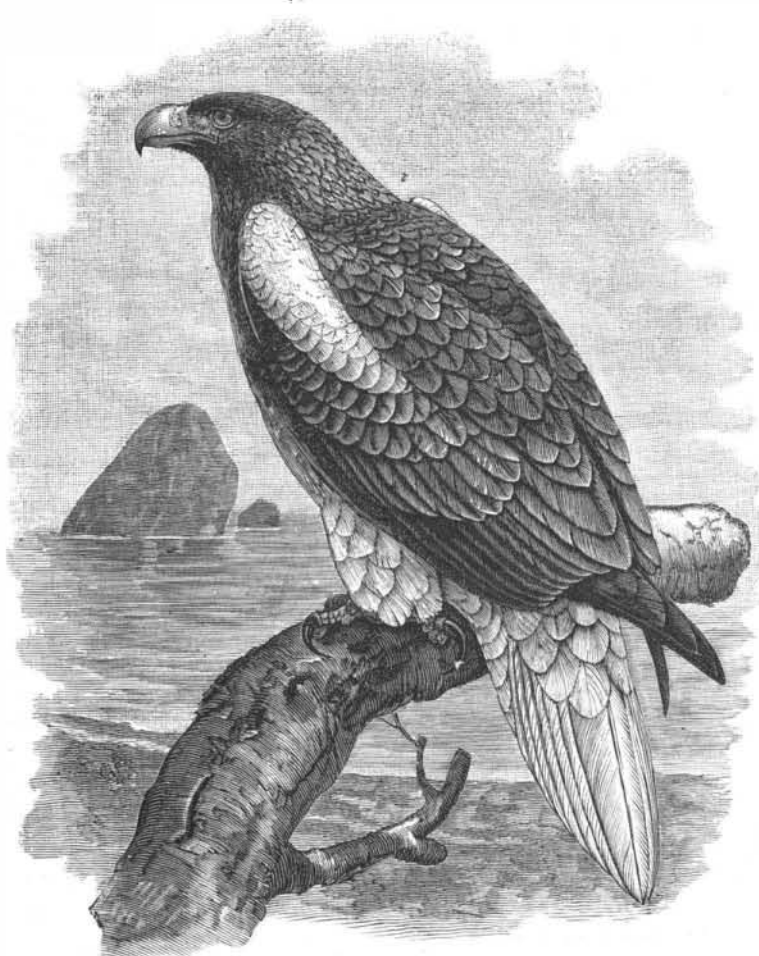
**The Importance of Stomata** in the circulation of the gases exchanged during respiration and the chlorophyl function is still disputed. The researches of Ungar, Sachs, Merget, and others have shown, it is true, that gases easily circulate through the stomata; but Mr. Boussingault, on the contrary, in his classical memoir on leaves, has established that the intensity of the chlorophyl phenomenon is independent of the stomata. We do not know, then, in what measure these orifices concur in causing the gases indispensable to respiration and to the chlorophyl function to enter the tissues. Mr. M. Mangin, in a note to the Academy of Sciences, presents the results of a certain number of experiments on this subject, and the following are his conclusions: The stomata are indispensable to the circulation of gases in aerial plants, and the closing of these orifices causes a more or less marked diminution in the respiratory gaseous exchanges, and a very great one in the chlorophyl gaseous exchanges.

**The Locking of Birds' Wings.**—In a paper read before the National Academy of Sciences, Prof. W. P. Trowbridge gave an account of a discovery that had lately been made by his son. This discovery is that birds of prey, and some others, have the power to lock securely together those parts of the wing holding the extended feathers, and corresponding to the human hand. The action of the air on the wing in this condition extends the elbow, which is prevented from opening too far by a cartilage, and the wings may keep this position for an indefinite length of time with no muscular action whatever on the part of the bird. While resting in this way, the bird cannot rise in a still atmosphere; but if there be a horizontal current it may allow itself to be carried along by it, with a slight tendency downward, and so gain a momentum by which, with a slight change of direction, it may rise to some extent, still without muscular action of the wings. Prof. Trowbridge also believed it possible for a bird to sleep on the wing.

**Effect of Electric Light on Vegetation.**—The electric lighting of the Winter Palace at St. Petersburg appears to have given rise to some unexpected and undesirable results. According to the *Electrician*, the sudden change from the sunless days of the northern winter to the blinding light of the banqueting halls, aided probably by the artificially heated and drier atmosphere of the rooms, causes the leaves of the plants used as ornaments to turn yellow, dry up, and fall off after being exposed to the light for a single night. The rapidity of the injurious action and its amount is in direct proportion to the intensity of the illumination, since plants partially shaded from the light, or in niches or similar places, were found to remain uninjured.

**Preserving Plants for the Herbarium.**—An excellent method of preserving the colors of flowers is given in the *Annals of Botany* by S. Schonland. It consists practically in a process of deoxidation by means of sulphurous acid. A saturated solution of sulphurous acid with water is mixed with methylated spirit in the proportion of three parts of the former to one of the latter. Plants with thick leaves are left for twelve or eighteen hours in this liquid, but delicate flowers only from five minutes to half an hour. After removal they are allowed to dry by exposure to the sun or to artificial heat and are then at once placed between sheets of drying paper in the usual way. If enough sheets are used, it is rarely necessary to change the paper. The above treatment not only preserves the color, but hastens the drying, so that sempervivums can be dried in two days and orchids and arums in one day. Plants which usually turn black in drying, such as *Melampyrum* and *Lathræa*, retain their natural color. In a few cases in which the color of the petals disappears, it returns when the plant is dry. The only difficulty attending the process is that of laying out delicate blossoms after treatment with the solution.

**Habits of Ants.**—On Thursday, December 1, Sir John Lubbock read a paper before the Linnean Society, in continuation of his previous memoirs, on "The Habits of Ants, Bees, and Wasps." He said it was generally stated that the English slave-making ant (*Formica*



PALLAS' NORTHERN SEA EAGLE (*Thalassæetus pelagicus*).

*sanguinea*), far from being entirely dependent on slaves, as was the case with *Polyergus rufescens*, the slave-making ant *par excellence*, was really able to live alone, and that the slaves were only, so to say, a luxury. Some of his observations appeared to throw doubt on this. In one of his nests the ants were prevented from making any fresh capture of slaves. Under these circumstances, the number of slaves gradually diminished, and at length the last died. At that time there were some fifty of the mistresses still remaining. These, however, rapidly died off, until at the end of June, 1886, there were only six remaining. He then placed near the door of the nest some pupæ of *Formica fusca*, the slave ant. These were at once carried in and soon came to maturity. The mortality among the mistresses at once ceased, and from that day to this only two more have died. This seems to show that the slaves perform some indispensable function in the nest, though what that is still remains to be discovered. As regards the longevity of ants, he said that the old queen ant, which had more than once been mentioned to the society, was still alive. She must now be fourteen years old, and still laid fertile eggs, to the important physiological bearing of which fact he called special attention. He discussed the observations and remarks of Graber as regards the senses of ants, with special reference to their sensibility toward the ultra-violet rays, and referred to the observations of Forel, which confirmed those he had previously laid before the society. Prof. Graber had also questioned some experiments with reference to smell. He, however, maintained the accuracy of his observations, and pointed out that Graber had overlooked some of the precautions which he had taken. His experiments seemed to leave no doubt as to the existence of a delicate sense of smell among ants. As regards the recognition of

friends, he repeated some previous experiments with the same results. He took some pupæ from one of his nests (A) and placed these under charge of some ants from another nest (B) of the same species. After they had come to maturity, he placed some in nest A and some in nest B. Those placed in their own nest were received amicably, those in the nests of their nurses were attacked and driven out. This showed that the recognition is not by the means of a sign or password, for in that case they would have been recognized in nest B and not in nest A. Dr. Warsmann had confirmed his observations in opposition to the statement of Lespich, that white ants are enemies to those of another nest, even belonging to the same species. The domestic animals, on the other hand, can be transferred from one nest to another, and will be amicably received. In conclusion, he discussed the respective functions of the eyes and ocelli, and referred to several other observations on various interesting points in the economy of the social Hymenoptera.

**Function of Raphides.**—Dr. E. Stahl suggests that raphides, or needle-like crystals of oxalate of calcium, are not, as is usually taught, mere products of excretion in plants; but that they serve a useful function to the plant in protecting it from the attacks of herbivorous animals. He finds that snails will reject such parts of the plant as contain these crystals, and that they consume only those that do not. The poisonous properties attributed to *Arum maculatum*, and the burning taste of the leaves, are due solely to the enormous quantity of crystals of oxalate of calcium stored up in them.

**Absorption of Water by Mosses.**—Mr. J. Reynolds Vaizey, in a paper on the absorption of water by mosses, shows by a series of experiments made on *Polytrichum commune* and *P. formosum* that water can pass readily through the external cell walls of the leaf, although it will not do so through the surface of the fruit stalk. This he shows to be due to the fact that in the leaf there is no layer of cuticle present, and that the external walls of the cell have undergone some change, so that water is easily absorbed by them. The seta or fruit stalk, however, presents this structure at the base only; the surface of the seta, apophysis and sporangium is smooth and glistening, and not capable of absorbing water, in consequence of being strongly cuticularized, although water readily passes up the interior of the seta.

**Fecundity of Fishes.**—Fishes produce so many eggs that if vast numbers of the latter and of the fishes themselves were not continually destroyed, these animals would finally fill up all the waters. For example, man annually takes 60,000,000 or 70,000,000 codfish from the sea around the shores of Newfoundland. But even that quantity seems small when we consider that each cod yields about 45,000,000 eggs each season, and that even 8,000,000 have been found in the roe of a single cod. Were the 60,000,000 cod taken on the coast of Newfoundland left to breed, the 30,000,000 females producing 5,000,000 eggs every year, it would give a yearly addition of 150,000,000,000 young codfish. Other fish,

though not equaling the cod, are wonderfully productive. A herring weighing six or seven ounces is provided with about 30,000 eggs. After making all reasonable allowances for the destruction of eggs and the young, it has been calculated that in three years a single pair of herrings would produce 154,000,000. Buffon calculated that if a pair of herrings could be left to breed and multiply undisturbed, for a period of twenty years, they would yield an amount of fish equal in bulk to the globe on which we live.

**International Geological Congress.**

The fourth session of this congress will be held in London from September 17 to 25 inclusive. Previous meetings were held in Paris in 1878, Bologna in 1881, and Berlin in 1885, at each of which a large number of geologists from all parts of the world were present. In Paris 21 countries were represented, in Bologna 17, and in Berlin 18. A circular has just been issued by the organizing committee of the London meeting, giving particulars of the congress and stating the general arrangements. A large and influential committee has been formed, including the chancellors of the chief universities, the presidents of the more important scientific societies and of those societies especially devoting themselves to geology, mining, etc., the Lord Mayor of London, and many of the chief government scientific officials. The honorary president of the congress is Professor Huxley, the president Professor Prestwich, and the vice-presidents are the president of the Geological Society, the Director-General of the Geological Survey, and Professor T. M'R. Hughes. Mr. F. W. Rudler is treasurer, Mr. T. W. Hulke and Mr. W. Topley are the general secretaries. To the last named all communications respecting the congress should be addressed at 28 Jermyn Street, London, S. W.