

THE HISTORY AND ART OF ARTIFICIAL INCUBATION.

The great French philanthropist and agriculturist, Olivier de Serres, was fully alive to the value of such an art, and he prosecuted many experiments upon it, which were fully described by him in his lectures at the Théâtre d'Agriculture, but he summed up his remarks by saying, that "as an art it was more curious than useful." One of the many persons in France who were impressed with the notion that artificial hatching was a most simple process, and if success was not realised under ordinary care with his apparatus, it must be the fault of the operator and not the principle, was M. Dubois; he followed Réaumur to the fullest extent, but at last came to the proper conclusion that the application of heat generated by fermenting materials was both uncertain and difficult to regulate, and he improved upon Réaumur's last principle of warming by stove fires. He raised the floor of a room, below which he placed a stove, with a large iron flue pipe passing from the stove room into the chamber above, and that pipe passed directly through the chamber. His fuel cakes were made of peat earth, clay, and pounded coal, all dried; these were placed in the stove, and burned with a slow dull heat, the products of combustion passed quite out of the egg-chamber, and the stove was supplied with air from the exterior of the room. There were several books in the ceiling of his egg-chamber, upon which the large baskets were hung containing the eggs, supported by cords, so that they could be raised or lowered according to the pleasure of the operator. The lower portion of the room was supplied with holes with sliding covers, for the admission of fresh air, and at the top of the room were several outlets for the over-heated air to pass out; by the two sets of apertures situated in the lower and upper part of the room, the required temperature was maintained. An account of M. Dubois' experiments was given in the "Dict. d'Hist. Naturelle-Poule."

A other claimant for favour in the art soon after started in France, M. Copincau, and he appeared self-confident upon the question, and in a pamphlet he published, entitled "L'Homme Rival de la Nature," he endeavoured to persuade the public that he had found the great secret. He selected any given room with a low ceiling, with ample means provided for upper and lower ventilation; he placed a hot-water furnace below, with pipes in egg-chamber running all round the sides and floor of the room; but his great discovery consisted in placing several pans of water on the floor, as he says, "to render the air equally moist with that under a hen." M. Bonnemain also followed up the experiments of M. De Réaumur, but gave up the idea of employing either of the processes for developing heat proposed. He, however, used some of the same rooms M. De Réaumur had experimented in; but instead of heating them by fermenting material all round the egg-drawers, he encased them with a water-chamber which was heated by a stove below. The egg-chambers were provided with a series of drawers capable of containing 10,000 eggs. He also placed a bucket of water within the chamber, for the purpose, as he stated, "of supplying the losses sustained by evaporation." His trials met with some success during 1771 and 1778, and an attempt was made to supply the public with artificially hatched chickens. This continued only for a very short time, and, like the rest, passed away, as it was soon found that no dependence could be placed upon the apparatus for hatching purposes; and we believe the remains of the great Réaumur-Bonnemain experimental egg-ovens are still in existence. During the time the last-named were being pressed into public notice, an amateur French poultry breeder, and an author, issued a pamphlet, entitled "Ornithologie Artificielle," in which he detailed some of his experiments upon the subject. He erected an arched brick structure, seven feet high and six feet four inches wide, with several openings for ventilation, under the entire floor of which were ranged open flues connected with a hot-air furnace; this oven was capable of containing about 16,000 eggs. His success was of a most limited kind when he came to put his models into working sizes, as he stated, "although I paid the greatest attention to them the utmost success obtained did not yield more than one chick out of six eggs." The infatuation led him into considerable useless expenses. The whole apparatus failed, and so did his resources, occasioned thereby, and his expensively built ovens were all pulled down.—*Land and Water.*

NEWS OF THE WEEK.

THE DOMINION.

There was ice an inch thick at Victoria on the 24th ult.
A daring attempt at incendiarism was made at Hamilton last week.
The Quebec Legislature meet for the despatch of business on Thursday, the 7th prox.
The Hunterstown (2) mills were destroyed by fire last week. Loss \$50,000, covered by insurance.
The man Coyle, charged with being implicated in the Missouri murder, has been acquitted.
The London Fair is a great success, the number of visitors daily averaging from 15,000 to 25,000.
The British Columbia Legislative Assembly is called for the dispatch of business for the 17th December.
Very gratifying news has been received from London respecting the state of Sir George Cartier's health.
Fears are entertained in the county of Huntingdon of a rising of the River Chateauguay, such as occurred in 1857.
The Central Board of Agriculture of Nova Scotia has been making heavy purchases of stock at the Hamilton Exhibition.
The New Brunswick Provincial Exhibition opened at Sackville last week. The attendance and number of entries were small.
All the railways in the Maritime Provinces have been put under one management. Mr. Carvell, now General Superintendent of the European & North American Railway, will take charge.

UNITED STATES.

Fanny Fern is dead.
Mrs. Greeley is seriously ill.
Small-pox is on the increase in New York.
Two fatal shooting affrays have occurred at Baltimore.
The Republicans have carried Ohio and Pennsylvania.
A fire in Sing Sing destroyed \$150,000 worth of property last week.
Mr. Froude, Prof. Tyndall, and Miss Emily Faithfull have arrived in New York.
The Alaska seal fisheries are reported as being in a most flourishing condition.
A serious and fatal affray between whites and blacks has occurred at Osceola, Ark.
The Hon. W. H. Seward died at his residence at Auburn on Thursday the 10th inst.
A diabolical attempt, which partly succeeded, was made last Friday to blow up the Raleigh, N. C., Sentinel office.
James R. Spaulding, founder of the N. Y. World, and more recently connected with the N. Y. Times, died on Friday last.
The Chicago Board of Trade celebrated the anniversary of the fire on the 9th inst., by taking possession of their new rooms.
Brigham Young has announced that he will establish a city according to the order of Enoch if the Saints will only obey him without question.
A riot occurred last week at Cincinnati between a Greely procession and some coloured people, in which several persons were wounded.
A quarter of a million dollars' worth of property was lost, and 500 men thrown out of employment, by a fire at the mine of the Lamotte Lead Co., Fredericktown, Mo.
Count von Arnim, First Secretary of the German Legation at Washington, has been recalled. He is succeeded by Andreas Bernstoff, son of the German Ambassador in London.
Last week some 250 steerage passengers by steamship "Atlantic" complained to the New York Commissioners of Emigration of rough insulting treatment from the crew and bad insufficient food. The commissioners were unable to hold an investigation, owing to complainants having gone their ways after arrival.
The American Secretary of State has received an official copy of the decision and award of the Geneva arbitration, handsomely engrossed in parchment and bound, with the signatures of the arbitrators. The document was enclosed in a neat wooden case highly polished. The Secretary of State presented it to President Grant, and it was afterwards taken to the department to be deposited in the archives.

BRITISH AND FOREIGN.

The Panama cable has been recovered.
Quiet is restored in Mexico—once more.
The Queen of Holland is to visit England.
The price of coal has again advanced in England.
The Czaritch Alexander is on a visit at Vienna.
The south of England was visited by a heavy rainstorm last week.
It is estimated that 300,000 persons died by famine lately in Persia.
The Sultan has conferred a decoration upon the Emperor of Russia.
A fleet of five German men-of-war is fitting out for a cruise round the world.
The Cuban revolutionists have invested Puerto Principe with a large force.
The French authorities have compelled Prince Napoleon to leave the country.
Two more prominent French Communists have been sentenced to death.
Forty men were killed recently by a mine explosion at Morley, Lancashire.
Five gambling places at well known German watering-places have been closed.
The Congressional elections in Northern Brazil were attended with riot and bloodshed.
Five hundred and eighty more French Communists sailed for the penal colonies last week.
It is said that Sir Roundell Palmer is to be elevated to the peerage, under the title of Baron Selbourne.
Five hundred miners have been thrown out of employment by the accidental flooding of a mine in Wales.
A Birmingham manufacturer has contracted to supply Russia with 150,000 rifles of approved pattern.
It is reported that the Prince de Joinville and the Duc d'Aumale will resign their seats in the French Assembly.
The question of the abolition of slavery in the Spanish colonies has been brought up in the Cortes, but unsuccessfully.
The English Postmaster General has issued orders forbidding the registration of Bradlaugh's *Journal* for transmission abroad.
Richard Wagner, the famous composer, has been offered the freedom of Bologna, where his opera Lohengrin recently had such great success.
Eighteen of the coal masters of South Wales have resolved to close their work shortly, pending a reduction of the wages of their employees.
The Danish Rigsdag was opened last week by the King in person. The opening speech promised a speedy solution of the Schleswig question.
The telegraphic tolls on the despatches forwarded and received at the expense of the British Government, on the subject of the indirect claims, amount to \$400,000.
The shares of the Bank of Spain have fallen five per cent in consequence of the refusal of the public to take its notes on account of the number of counterfeiters in circulation.
A Supreme Council of War has been appointed in France, charged with the organization and administration of the army, but not with the direction of military movements.

A fight took place last week at Stamboul between Turks and Persians. The troops were called out to suppress the riot and fired into the Persian party, killing three and wounding thirty.

King Amadeo, while walking in the Plaza del Oriente, Madrid, a few days ago, was assailed by two men who threw stones at him, fortunately without injuring him. The desperadoes escaped.

An official statement of the result of the "option" in Alsace and Lorraine shows that of the natives of these two provinces 164,633 have declared in favour of retaining French citizenship. Of this number 38,800 declarations have become valid through emigration to France and in addition to it 12,000 domiciled Frenchmen have left the provinces.

CHESS.

Solutions to problems sent in by Correspondents will be duly acknowledged.

TO CORRESPONDENTS.

P. S. McG., Milton, Ont.—Your Problem will appear soon; it seems to us quite correct.

J. H. G., St. John, N. B.—Your Problem is under examination; have written.

P. P. B., Kingston, Ont.—Your Knight's Tour will be reported on soon.

A well-contested game in the late Tourney at Hamilton.

SCOTCH GAMBIT.

| White. | Black. |
|-----------------------------|---------------------------|
| Mr. W. T. Taylor, Hamilton. | Mr. F. T. Jones, Toronto. |
| 1. P. to K. 4th | P. to K. 4th |
| 2. K. Kt. to B. 3rd | Q. Kt. to B. 3rd |
| 3. P. to Q. 4th | P. takes P. |
| 4. K. B. to Q. B. 4th | P. to B. 4th |
| 5. Castles | P. to Q. 3rd |
| 6. P. to Q. B. 3rd | B. to K. Kt. 5th |
| 7. Q. to Q. Kt. 3rd | B. takes Kt. |
| 8. P. takes B. (a) | Kt. to K. 4th |
| 9. P. takes P. | B. takes P. |
| 10. Q. Kt. to Q. 2nd | B. to Q. Kt. 3rd |
| 11. P. to K. B. 4th | Kt. takes B. |
| 12. Kt. takes Kt. | Q. to K. B. 3rd (b) |
| 13. Q. to R. 4th, ch. | K. to K. B. sq. |
| 14. P. to K. 5th (c) | Q. to Kt. 3rd, ch. |
| 15. K. to R. sq. | Q. R. to K. sq. |
| 16. P. to Q. Kt. 3rd | Kt. to K. R. 3rd |
| 17. P. to R. B. 3rd | B. to Q. 5th |
| 18. B. to Q. R. 3rd (d) | B. to Q. B. 4th |
| 19. B. takes B. | P. takes B. |
| 20. Q. R. to Q. (e) | P. to Q. R. 3rd |
| 21. Q. to Q. 7th | P. to Q. Kt. 4th |
| 22. Kt. to K. 3rd | Q. to K. 3rd |
| 23. Q. takes Q. B. P. | P. to K. Kt. 3rd |
| 24. Q. takes P. ch. | K. to Kt. 2nd |
| 25. R. to K. Kt. sq. (f) | R. to K. B. sq. |
| 26. Q. to R. 3rd | K. R. to Q. sq. (g) |
| 27. Q. to Kt. 2nd | K. to B. sq. |
| 28. K. R. to K. sq. | Q. to K. R. 6th |
| 29. Q. to K. 2nd | R. to K. sq. |
| 30. R. to Q. 6th | Kt. to K. B. 4th |
| 31. Kt. takes Kt. | Q. takes Kt. |
| 32. R. to K. B. 6th (A) | Q. takes R. |
| 33. P. takes Q. | R. takes Q. |
| 34. R. takes R. | R. to Q. B. 3rd |
| 35. K. to Kt. 2nd | R. takes P. |
| 36. K. to Kt. 3rd | R. to K. 3rd |
| 37. R. takes R. | P. takes R. |
| 38. K. to Kt. 4th | K. to Kt. 2nd |
| 39. P. to Q. Kt. 4th | K. to B. 3rd |
| 40. P. to R. R. 4th | P. to R. 3rd |
| 41. P. to Q. R. 3rd | P. to K. R. 4th, ch. |
| 42. K. to Kt. 3rd | K. to R. 4th |
| 43. K. to R. 3rd | K. takes P. wins. |

(a) Instead of this, the attack might have been continued as follows:—

S. B. takes P. ch. K. to B. sq. (best.)
B. takes Kt. &c.

(b) Overlooking, apparently, the awkward check which prevents casting, and gives him a constrained position.

(c) Perhaps, perhaps; taking of the bishop at once seems to leave White the superiority.

(d) Very well played; it is obvious that Black cannot take Rook.

(e) Losing time; by simply playing Q. takes P. here, the attack might have maintained his advantage.

(f) Even yet: R. to Q. 6th looks like a winning move; if Black play Q. to R. 6th, White may answer with Q. to Q. 4th.

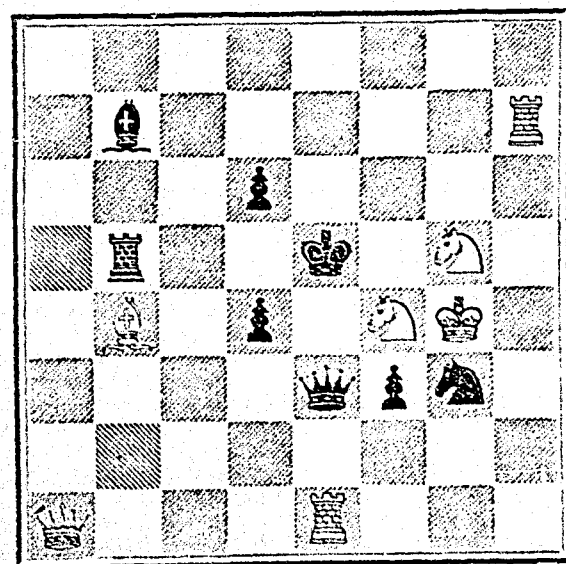
(g) Black now releases his forces and begins a counter-attack.

(A) This inconsiderate move admits of exchanges, after which the ending is in Black's favour, on account of the weakness of the adverse pawns; Q. to K. 4th should have been played instead.

PROBLEM No. 63

By J. Henderson, (of St. Liboire, P. Q.)

BLACK.



WHITE.

White to play and mate in three moves.

SOLUTION OF PROBLEM No. 62.

| White. | Black. |
|------------------------------|-----------------|
| 1. B. to K. Kt. 6th, ch. | K. takes B. |
| 2. Q. to K. R. 3th, ch. | R. takes Q. |
| 3. Kt. to K. 7th, ch. (dis.) | P. to K. B. 4th |
| 4. R. takes P., mates. | |