

altogether—and so leave Congress to launch upon the country whatever vagaries or political jobs may be lobbied through that body. The only effective relief from the present false situation is to give to the President, through his Cabinet officers, a voice in the guidance of legislation, so that the views of the executive, as well as of the legislature, of the responsible national authority as well as of private interests, may be heard before it takes final shape, and so that, if it finally comes to a veto, the merits of the case and the contestants may be thoroughly understood by the country.

Meantime it is greatly to be feared that Senator Stewart's anxiety about the liberties of the people may be seriously increased by the results of the autumn election.

G. B.

Boston, May 26, 1888.

## Notes.

MR. LOWELL'S address before the New York Reform Club will terminate a volume of political essays derived principally from the *Atlantic Monthly* and *North American Review* during the past thirty years. Houghton, Mifflin & Co. will be the publishers.

'The Poets of Maine,' compiled by Geo. B. Griffith, is almost ready for delivery by Elwell, Pickard & Co., Portland.

The Palestine Exploration Fund announce the publication of three important works: 'The Survey of Eastern Palestine,' by Captain Conder, R.E., with all the author's original drawings, maps, and plans, and with the results of Herr Schumacher's work in the same district; 'The Results of the Archaeological Mission of M. Clermont-Ganneau,' with all the original drawings of M. Lecomte; and 'The Natural History of the Wady Arabah,' by H. Chichester Hart, with illustrations. The edition will be limited to 500 copies, and the subscription price will be three guineas for the first volume, and two guineas for each of the other two. The agent for these publications is Mr. A. P. Watt, 2 Paternoster Square, E. C., London.

Mr. E. Towry White, 31 Charing Cross, London, S. W., announces the publication of a list of the kings of Egypt, giving in hieroglyphic characters their names and titles, and the names of their wives and children so far as at present known, with an index giving the ordinary name, and also the literal reading of the hieroglyphics. To this will be added a list of the names of the Roman emperors and of the Ethiopian kings as they appear in cartouches. The work will consist of 175 plates, printed only on one side of the paper. The subscription price is one guinea.

Mr. Ferdinand Ongania, Venice, having completed the work of years in his 'Basilica of Saint Mark in Venice,' with a commentary, historical and artistic, by Venetian writers, offers new terms of subscription to this extraordinary illustration of one of the world's most precious monuments. Payment may be made in the course of three years in quarterly instalments, the first on delivery of the entire work. The total cost is a little more than £93.

To "Bohn's Select Library of Standard Works" (London: George Bell & Sons; New York: Scribner & Welford) has just been added 'Selected Plays of Molière'—"The Miser," "Tartuffe," and "The Shop-Keeper Turned Gentleman"—a little volume of two hundred pages.

A useful arrangement, by the way, of the plays of Molière has been made by M. Maurice Albert, son of the late Paul Albert, the well-

known *professeur de faculté* and very clever writer on French literature. This 'Théâtre choisi de Molière' (Paris: Armand Colin; Boston: Schoenhof) contains in full the six plays demanded in the official programmes for higher public instruction: "L'Avare," "Le Bourgeois Gentilhomme," "Les Précieuses ridicules," "Les Femmes savantes," "Le Misanthrope," "Le Tartuffe." To these six plays M. Albert adds extracts from most of the other comedies, connecting them by abstracts of the omitted scenes. A very fair and sufficiently complete impression of the author is thus presented in a 12mo volume of 520 pages. The work is completed by an excellent biographical introduction, historical notices of each play, abundant explanatory foot-notes, and a valuable "literary explanation" of "Les Femmes savantes," given as an example of the kind of work that should be required in the school study of Molière, or any other dramatist. It may be seen from this summary how useful the volume would be to any one beginning the study of Molière.

M. E. M. de Vogüé's well-known work, 'Le Roman russe,' until now only to be had in the large octavo edition, has been published by Plon & Nourrit in the convenient 18mo form.

Two more volumes have also been issued of the same publishers' edition of the complete works of Dostoyevsky (Boston: Schoenhof)—'Les Pauvres Gens,' his earliest novel, which, when it appeared, at once established his reputation, and 'Les Frères Karamazov,' the work in course of publication at the time of his death. M. Victor Derély is the translator of the first of these, and the second, which has been in progress for several years, is done by MM. Halpérine-Kaminsky and Charles Morice, a literary partnership which seems to have produced the most satisfactory results, judging from a long episode which appeared in 1886 in the *Revue Contemporaine*.

Prof. Kluge's interesting tract, 'Von Luther bis Lessing,' which we have already described at some length, has reached a second edition, without material alteration, but with a colored language-map of Germany (Strassburg: Karl J. Trübner).

In the annual report of the Provost of the University of Pennsylvania, we remark Prof. Dolley's account of a biological excursion to the Bahamas in June, 1887, with a view to establishing there a zoological station like that at Naples. The University wisely took a table at the Naples station, Prof. Dolley being its representative for a year, and will reap the fruit of its liberality if, as is to be hoped, he is able to set up at Nassau a marine laboratory in connection with his department at the University on the Schuylkill.

Turner's habit of embellishing and composing, rather than imitating, the natural landscapes to which he attached a definite name and locality, is well exemplified in the *May-Portfolio* (Macmillan). Here, side by side, are shown an original drawing of the Reichenbach by J. R. Cozens, and a copy of it made by Turner, who has much improved upon it, artistically speaking. There are several interesting facsimiles of Turner's pencil drawings in the same article ("The Earlier English Water-Color Painters: Turner and Girtin"). Mention should also be made of at least two of the full-page illustrations, viz., the etching by G. M. Rhead after H. Sorgh's "Card-Players," and the mezzotint by F. Short after Cotman's "St. Mary Redcliffe."

The May Proceedings of the Royal Geographical Society opens with an interesting paper on the ruby mines near Mogok, Burma, by Mr. Robert Gordon, who has recently visited

them to survey the region in which they are situated. This ruby-bearing region is an area of about ten miles long by five wide, and consists of groups of small valleys, lying some sixty miles north of Mandalay. The population is divided into two classes, the mining numbering about six thousand souls, and the agricultural about half as many. The people are of several distinct tribes, who, though they have lived for centuries side by side, never intermarry, and so preserve their peculiar tribal characteristics. Their houses are well built and comfortable, and there is a general appearance of wealth throughout the district. Three different methods of mining are employed: The first, and that of the least importance now but probably the most valuable in the future, is by working in fissure veins. The second is by washing, and on a very insignificant scale. No attempt has yet been made to wash the hill-sides by water under pressure. The third and most important method is by digging pits. The rubies are rarely found in the crystal form. When flawless and beyond a certain weight they are worth ten times as much as diamonds of the same weight. In the discussion which followed the reading of the paper, Mr. Streeter stated that two Indian-cut rubies had recently been received in London, one of which, after recutting, weighed 38½ carats and was sold for £20,000, and the other, 32¼ carats, sold for £10,000.

The *Scottish Geographical Magazine* for May contains the second and concluding part of Mr. J. Y. Buchanan's paper on "The Exploration of the Gulf of Guinea." While his ship was anchored off Ascension in an unusually heavy sea, which prevented their landing for several days, a series of measurements of the waves were made, with the following results: The height of the highest roller was twenty feet from trough to crest; the medium length from crest to crest was 625 feet, the largest measuring 770 feet, and the waves travelled at the uniform rate of 23.4 nautical miles an hour.

The *Revue Scientifique* for May 12 contains a paper read before the Paris Geographical Society on the "Geographical Distribution of the Population in France," by M. Victor Turquan, Chief of the Statistical Bureau of the Ministry of Commerce. He fixes the mean density of the whole country at 72 inhabitants to the square kilometre, the mean density of the earth being 10. This puts France in the sixth place among the European nations, Belgium leading with 201, Netherlands 133, Great Britain 119, Italy 105, and Germany 86. He dwells upon the striking solitude of large tracts in Champagne, the hills of the Côte d'Or, the great central plateau, the Landes and Berri. The country for a great extent about Paris also is very sparsely populated. The present groupings of the people he regarded as being largely dependent upon the nature of the soil that nourished them, and therefore comparatively stable and permanent. The paper was illustrated by maps, one series of which was so colored as to represent the population of the different communes. A section of this map is reproduced in the *Revue*.

M. Victor Delvay's slippered view of the late Désiré Nisard in *Le Livre* for May is brief and unsatisfactory, and the portrait of this professorial light of the Second Empire which it accompanies may be thought a better vindication of his public character by his private. One still recalls Béranger's inuendo—

"Pour moi Nisard sera-t-il l'éloquence?"

In another part of *Le Livre* we read that Nisard left memoirs for posthumous publication. M. Julien Lemer comes nearer the personality of his subject in "Quelques Autographes in-

times de Charles Baudelaire," which ends with censure of the poet's family for suppressing certain unpublished works referred to in this correspondence, after his death. Opinions will differ on this point, accordingly as one esteems Baudelaire's productions as "pourriture" or otherwise. M. Lemer approves Hetzel's idea that after a certain period the state should abridge the property right of an author's heirs or successors, and, as in Mr. Pearsall Smith's plan, throw the works open to all publishers, on the sole condition of paying a fixed percentage on the selling price, which the state would return to the heirs. M. A. Quantin pays an affectionate and reverent tribute to a veteran publisher lately deceased, Henri Fournier, who began an apprentice of Didot and ended an associate of Mame at Tours, and had, between, an honorable career on his own account at Paris. His establishment in that city eventually fell to M. Quantin himself.

Any one who has read Tolstoi's 'Physiology of War: Napoleon and the Russian Campaign,' will be repaid by following M. Albert Sorel in his discourse before the École des Sciences Politiques on Tolstoi as an historian. A somewhat condensed report of it was given in the *Revue Bleue* for April 14. The critique is the work of an admirer unable to accept the theory of the uselessness of great men in determining the course of history. M. Sorel, without feeling, exposes Tolstoi's treatment of Napoleon and his generals in 'War and Peace,' and consoles himself for the anti-French bias by remarking that if Tolstoi is "très sévère aux Français—il l'est incontestablement—il l'est aussi, sans aucun doute, et plus encore aux Allemands; il professe pour eux, en toute occasion, un dédain colossal." The most suggestive part of the paper, however, is M. Sorel's showing how Tolstoi makes a Shaksperian use of Thiers's history, as in the episode of the Cossack who talks freely with the Emperor, not recognizing him; and the hardly fortuitous parallel between his views on war and those of Joseph de Maistre, notably in the latter's 'Soirées de Saint-Petersbourg.'

We have received the seventh instalment of the Codici Palatini of the Florence Central National Library in the "Indici e Cataloghi" issued by the Italian Ministry of Public Instruction. Like the foregoing, it contains a highly interesting description of the several MSS., with an array of first lines in the case of the poems. Dante, Petrarch, Boccaccio, and many lesser luminaries stud the pages.

We print on another page the last of the late Michael Heilprin's critical contributions to the *Nation*—the review of Sayce. It was delayed in getting into type till his fatal illness overtook the writer.

—Harper's for June continues the papers upon the West which were promised as one of the features of the magazine for the current year. Of the extremely favorable view which Mr. Warner takes of the city of Chicago we have already spoken, but his discovery that it is a modest city in his first article hardly prepared us for the announcement in the second paper this month that it is an uncommonly moral city. The opposite view, which has not been hitherto opposed, is the prevalent one, and certainly one does not need to go far to find grounds for it. Mr. Warner ascribes it to the influence of the press of the city, which he thinks is not representative of the real facts; on the other hand, he gives no reasons for his own conclusion that Chicago is more wholesome morally than other cities of its size, and than many much smaller. A less doubtful distinction of the city is its attention to education,

in which, like the entire West, it is eminent; but, notwithstanding Mr. Gunther's collections, to which Mr. Warner gives much space, Chicago libraries and museums must be regarded as things of the future. The other article in this field is upon Kansas, of which State a comprehensive account is given, so far as its soil, climate, and material progress are concerned. We observe in it a new word, which has certainly sprung from the soil, "urbiculture"; and as an American equivalent for what the Greeks called "colonization" it is not without a meaning, but it will probably be some time before it becomes established as a branch of human activity and is taught in the universities of the prairie. Mr. Bowker finishes his survey of "Literary London" with notices of the novelists and portraits; but it is the latter that make the article. A sketch of Capri, which does not lose its attraction as a subject, is not very good, nor are the views those which give the island its peculiarity; and the paper upon life with the Arabs is equally unsatisfactory. In the Easy Chair Mr. Curtis defends the American press with skill, and says a good deal which is worth remembering by those who look for a virtue in it which does not exist in the community, of whose interests and tastes it is the expression; disinterestedness is perhaps really greater in it than in any other business enterprise.

—Scribner's begins its series of railroad papers with a number of beautiful illustrations, by means of which a view of engineering is given to the eye that is an effective aid to the text. The characteristics of American railroading, in the department of construction, are very clearly pointed out, especially the substitution of the lay of the land for the method of tunnelling, which is so much more resorted to in Europe. It is an advantage, too, that the writer begins at the beginning, with the planning of a line, and dwells on the great importance of this to the cost and the success of a road. He defends the American system of building rapidly and cheaply, and then, as the business of the line develops, rebuilding with better material, and he remarks upon the good fortune of the West in having the railroad to go first and determine direct and inexpensive lines of communication on which the grouping of the population afterwards depends. There are other features of the article, showing the development of railroading in the change from iron to steel and such particulars, which contribute to make it an excellent introduction, though it must be said that in attributing the amelioration of all things in this century and in futuro to the railroad, the writer gives to one element in modern civilization a primacy which has been unrivalled since the days of Aaron's rod. An article upon life in the hospitals will be of interest to the many who are concerned indirectly in charities; Prof. Hall's "Story of a Sand-Pile" is for social philosophers; Mr. Birrell's notice of Cardinal Newman, with two excellent portraits, is welcome, but very inadequate; Mr. Stevenson's discovery that Fielding was a gentleman deserves to be chronicled; and of Mr. Aldrich's pastoral we have only to say that it is in the most finished form of the popular, piquant, society school of verse, and bears comparison with anything in its vein.

—Halliwell-Phillipps writes to an American friend: "This winter has been a season of sore disappointment to me. I was greatly in hopes to have made good progress in the arrangement of my still very large stock of unpublished materials illustrative of the life of Shakspeare,

but a succession of minor illnesses has sufficed to limit my work for months past to the composition of a few controversial letters. All this is rendered the more disappointing by my publishers' notice, just come to hand, that they have sold out all of the last edition [the seventh] of my 'Outlines.' No one who has read a page of the Life of Shakspeare, which Mr. Phillipps still modestly terms 'Outlines,' though the last edition has swelled to 848 pages, will wonder that a new edition is called for every year. It is hard to believe that any one can read through that work and still remain unconvinced from the Baconian heresy. Whoever recalls how Mr. Phillipps, when first putting his hand to the 'Outlines,' deplored that "the time he had occupied in gathering together the necessary artistic and literary material had practically excluded him from making an effective use of his accumulations," will not easily believe that he will not still bring forth fruit up to the old age of Gladstone.

—The activity of our State legislatures is strikingly shown in Mr. Raymond L. Bridgman's little book, 'Ten Years of Massachusetts' (Boston: D. C. Heath). Under a dozen general heads—Public Administration, Labor Legislation, Education, and the like—he has grouped the substance of the most important statutes passed by the General Court since 1878; and in a number of cases he has added instructive comment on the growth of legislation, and on the influences which have brought about particular acts. In nearly every field of legislation there has been an honest attempt to correct abuses and to advance civilization; many of the acts are models which other States would do well to copy. The significance of the book is, however, its unconscious testimony to a change which seems to be coming over the popular conception of government. Year by year the Legislature has entered upon new fields. The record shows a large number of acts on forests, foods, the water supply, and public health. Additional protection is provided for passengers on railroads and employees of railroads and factories. Children are protected from cruelty, from acting in theatres, from roller-rinks, and from toy-pistols; and they are instructed in temperance hygiene. The Commonwealth has gone to the point of putting mufflers on "pop-up" safety valves. Moreover, the State more and more assumes the administration of local laws, either by creating commissions or by limiting the police, taxes, and debts of municipalities. Another striking feature is the number of new laws which are notoriously not executed. Such are the provisions for a secret ballot; against betting and gaming, the selling of "police" illustrated papers, the selling of cigarettes to boys; and the saloon-screen law. The influence of "labor" is plainly seen in acts on convict labor, the regulation of factories, and weekly payments, and in the proposal, which was almost carried, that the State should build small houses to be paid for in instalments.

—Library catalogues are seldom of interest, unless to specialists. One noteworthy exception is the earliest 'Catalogue of the Library of the United States,' published in 1815, pp. 170, xxxii. This work was the production of Jefferson, and the only one of the kind that can boast a President or ex-President as its author. The Congressional Library had been burned by the British on August 24, 1814. Within a month Jefferson wrote, offering to sell his library to Congress on its own terms, and forwarding a catalogue which, in its plan, dated from his first study of Bacon, but which in details had grown with the growth of his collection. His proposal was



at once accepted by the Senate, and unanimously, as it was felt that the Jeffersonian gathering contained more books specially needed in Congress than were elsewhere within reach, and also that, having been accumulated with much pains, day by day, during Jefferson's Parisian residence, it would form a good nucleus for future accretions in all departments. In the House, however, the bill for making the purchase encountered steady opposition. At the outset a motion to postpone indefinitely was only defeated by a vote of seventy-three to sixty-nine. It was then proposed to purchase only such a part of the Jefferson books as were suitable for Congressional purposes. When it was ascertained that the books must all be bought or none of them could be had, there was talk of "selecting such books as might be useful to members and selling the rest at auction." But the most memorable motion was made by Mr. King of Massachusetts, who moved "to instruct the Library Committee, as soon as the Jefferson volumes should have been received in Washington, to select therefrom all books of an atheistical, irreligious, or immoral tendency, if any such there be, and send the same back to Mr. Jefferson without any expense to him." "The debate," says the chronicle, "became rather too animated, and was checked by the Speaker." The purchase was at last voted by a majority of ten.

—The threefold division of the Catalogue was no doubt suggested by these words of Bacon: "The parts of human learning have reference to the three parts of man's understanding, which is the seat of learning: History to his memory, poesy to his imagination, and philosophy to his reason." Under these three heads the books are classed in forty-four chapters. The volumes were reckoned by their owner about ten thousand, and the price paid was less than \$25,000. It is unlikely that any American library of its size was more valuable, or better selected. It is a shrewd saying: "If you would find out what a man's character is, get a sight of his personal account-book." Jefferson's book catalogue is suggestive of secrets regarding his life, and so it ought to be bound up with his works, and if possible in facsimile. In a book published at Boston in 1712 John Wise, a Puritan parson, wrote the following words: "The end of all good government is to promote the happiness of all, and the good of every man in all his rights, his life, liberty, estate, honor," etc. This and others of his utterances gave Wise fame as the first American Democrat. Two editions of his work were republished at Boston in 1772, for no pre-Revolutionary writer was such a master of style. The similarities in Wise to phrases in Jefferson's Democratic Declaration have awakened curiosity as to whether Jefferson had read the work of Wise. Much fruitless search has been made. The catalogue has an entry which may serve to thicken other proofs, in an index of the surnames of authors which Jefferson himself made, as he expressly states. Among them is the name Wise. The reference there made to chapter xv is erroneous. But the occurrence of the name tends to show that he had the book, and the more as the work of Wise was a pamphlet of not more than a hundred pages. In the chapter on Politics are many volumes of Political Tracts without authors' names. No. 183 is an octave of Tracts from 1769-73, which includes the year when John Wise was republished. It is worth search to discover whether John Wise is not now sleeping in the Congressional Library after inspiring Jefferson.

—The rise of the earliest Christian art has left its tide-mark still traceable in Irish art, while subsequent advances have mostly obliterated it from the continent of Europe. The interest of the art itself is narrow, though real. Its excellence is in its manuscripts, and in its less known metal work, forms of art which were quietly cultivated in Ireland when the rest of Europe was given over to invasion and decadence. St. Patrick was converting the Irish and laying the foundation of their monastic church while Genseric's pillage of Rome went on. When the period of invasion was over, and the arts began to revive on the Continent, Ireland followed, *hauud pari passu*, but in the same track, till her season of invasion set in, and permanently stopped her advance. We see in her, therefore, a curious example of arrested growth, whose interest is greatly in the light which it throws on its continuation elsewhere. We find on the Continent the complete development, while the early stages have disappeared. In Ireland the early stages are left, and the development has never followed. Every study that tends to connect Irish antiquities with the main history of Art in Europe is welcome, and this is the virtue of Miss Margaret Stokes's work, for which her knowledge of Christian antiquities and her association in the special studies of the late Lord Dunraven have given her special qualifications. Her little volume, which is freely illustrated, is not only valuable, but readable. It bears title—'Early Christian Art in Ireland' (London: Chapman & Hall; New York: E. & J. B. Young & Co.).

#### LEA'S HISTORY OF THE INQUISITION.—I.

*A History of the Inquisition of the Middle Ages.* By Henry Charles Lea. 3 vols. Harper & Bros. 1888.

MR. LEA needs no commendation to the students of mediæval history as the most learned living guide to their studies in certain phases of mediæval life and thought. He has chosen for his themes the more obscure forces which were acting on the minds of men in the middle period, and which were training them for those more striking exhibitions of activity in politics and war which make up the narrative of the ordinary historian. He has little concern with the growth of kingdoms, with struggles for personal or family aggrandizement, least of all with the mere biographies of kings and prelates. His former works on 'Superstition and Force,' and on the 'History of Sacerdotal Celibacy,' showed the tendency of thought which is here carried out to a still greater extent. These earlier volumes contained studies in the great legal and social institutions on which mediæval life was based. They led the student into that strange middle world where men moved like the half-demented victims of terrible delusions. It was Mr. Lea's special interest to show that the singular manifestations of this mental condition were not, in fact, outbursts of fanatic madness, but were deeply rooted in the legal and social ideas of the time. Law, as the embodiment of racial instincts, has been the starting-point and the sure basis of his studies.

In beginning the history of the Inquisition he has been guided by the same principle. He expressly declares his conviction that "the surest basis for the investigation of a given period lay in an examination of its jurisprudence." We are thus able to feel that he has solid ground beneath his feet, and, no matter how incredible the instances of human weakness and credulity which he presents, we must believe that he has not borrowed one particle

from his own prejudice, nor drawn ever so slightly upon his historical imagination.

The whole period of the Inquisition Mr. Lea divides at the Reformation into two distinct parts, of which only the former is treated in these three considerable volumes. It will thus be seen that some of the most terrible and dramatic portions of the history, especially those relating to the Spanish Inquisition and its dealings with the Low Countries, still remain to be considered. It must be the wish of every scholar that the author may be spared to complete the work according to his present plan.

As in his previous work, so here, Mr. Lea takes his subject in its widest meaning. By the history of the Inquisition he means not merely an account of the institution itself, but an exhaustive examination of the social, intellectual, and political conditions which produced it. He means, further, an array of illustrations of its working and of its effects upon society, such as make any serious doubts as to the general accuracy of his presentation impossible. The survey of the conditions which made the Inquisition possible, we might almost say inevitable, occupies one-half of the first volume. It is a masterly summary of the process by which the Church rose to be the absolute dominating power over the minds of men. That process is shown in the gradual development of the idea of heresy, and its extension to include every form of departure from the usages of the Church. The awful episode of the Albigensian Crusade is treated as the natural outcome of the duty of the organized Church to insist upon uniformity of belief and practice as essential to true Christianity. It would be too much to say that Mr. Lea has made perfectly clear precisely what the heresy of the Albigensians was, whence it came, what was its relation to the other forms of mediæval divergence from orthodoxy, and the basis of its hold upon the population of southern France. These are still, and are likely to remain, obscure problems.

The description of the Catharan heresy, drawn from many sources, makes it very clear why the policy of persecution became a necessity. The very existence of Catholicism was endangered by a theory of the true Church which made it consist of a select body of saints, instead of being the natural home and refuge of all mankind. This doctrine was spreading very rapidly, and the dominant Church was forced to defend itself or perish. Singularly enough, the rescue of the Church came from an impulse strangely like that which was threatening its very life. There was no more potent cause of heresy than a sense of the insufficiency of the Church organization for its proper work in the world; this same sense of insufficiency produced the mendicant orders, who were to be the chief weapon of the Church against heresy. The fanatic devotion of Dominic and Francis, if it had been rejected by the Papacy, as at one time it seemed likely to be, might very easily have been turned into a critical and furious opposition. As it was, the means for the destruction of heresy were put into the hand of the Papacy almost against its will, and from that time onward persecution developed itself with resistless force.

In describing the Holy Office, Mr. Lea departs from the tradition which would represent it as a new creation, and shows that it was a development out of perfectly well-recognized principles of legal process. The "inquisition" was a form of procedure well known to the Roman law; its peculiarity consisted in its use as a means of hunting down the offender, and it was the gradual application of this process to the trial for heresy which produced