[Evans. E. P.]

Morgan's The American beaver and his works.

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(1868)

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is a lesson to be learned from the Archbishop's portion of the controversy. From his position in the Church we may safely conclude that he is a man of more than ordinary intellectual vigor, strengthened by careful training. Yet the result of that training, as here exhibited, shows how the reasoning faculties have been stunted, and how the habit of blindly receiving and dogmatically administering faith without examination has led him to consider arrogant assertion to be equivalent to proof. Even his moral sense becomes dulled, when the reputation or interests of the Church are at stake. As she is infallible, the facts which prove her fallibility must be got out of the way; and if garbling and misrepresentation are necessary to accomplish this, the fault lies with the facts, and not with the Archbishop. The same spirit is shown in his pastoral on the Encyclical and Syllabus of December, 1864, a production which he evidently regards with peculiar pride, as he several times refers to it in the course of the controversy, and finally prints it. In this remarkable gloss on those celebrated documents, he sophistically endeavors, sometimes by the *suppressio veri*, and sometimes by the *suggestio falsi*, to render them palatable to an American community. It was doubtless honestly done for his own peace of mind. The Syllabus was the utterance of the representative of Christ, and he had to receive it and to believe in it, but its crude mediævalism was utterly repugnant to his sense of right and liberality of feeling. To reconcile the irreconcilable, therefore, he seems to have sacrificed some of his own convictions, while persuading himself that the words of the Pope meant something very different from their actual and apparent sense. That he intended to deceive his flock we can scarcely believe, and we have no doubt that he succeeded in deceiving himself.

The Archbishop's frame of mind is thus the best evidence of the truth of Mr. Vickers's thesis. In this point of view, perhaps, the rest of the controversy is surplusage; and yet the Congregationalist minister plants his blows with so much vigor, and with such evident relish, that we can safely recommend this racy pamphlet to all who may enjoy an exhibition of intellectual digladiation, as well as to those who may wish to know what are the aims and policy of Latin Christianity. Unfortunately, those who most need the information will probably be the last to seek it.

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9. — *The American Beaver and his Works.* By LEWIS H. MORGAN, Author of "The League of the Iroquois." Philadelphia: Lippincott & Co. 1868. 8vo. pp. 330. By Edward P. Evans.

THE beaver is of very ancient lineage. Greek and Roman naturalists and geographers, Pliny, Herodotus, Ælian, and Strabo, have left

us descriptions of its characteristics and habitat. Allusion is made to it in the elegies of Ovid, and Juvenal uses some of its supposed idiosyncrasies to give point to his satires. Its ancestry is pre-Adamitic, and can be traced far back into the tertiary period; fossilized specimens of its progenitors have been found side by side with the remains of the mastodon and the megaceros. It is to the American variety of this cunning rodent that Mr. Morgan's interesting monograph is devoted. Cuvier, Brandt, and other zoölogists have maintained that *Castor Europæus* and *Castor Americanus* belong to entirely distinct species; but our author, after a very elaborate investigation of the subject, sees no necessity for assigning a separate origin to these varieties, although they differ considerably from each other in anatomical structure and habits of life. The beaver of the Old World is less sagacious than that of the New; it does not seem to possess the same social instinct and architectural skill, rarely builds dams or lodges, and never on a large scale, but leads a solitary life in burrows.

The paradise of beavers on this continent is a district eight miles in length and six in breadth, extending along the southwest shore of Lake Superior, immediately west of Marquette. It is a region of hills and lowlands, covered with dense forests of evergreen and deciduous trees, and well watered by numerous small rivers and lakes, and is therefore especially adapted to encourage beaver occupation and to promote beaver felicity. Within this area, of which Mr. Morgan has made a thorough exploration and gives an excellent map, there are sixty-three beaver dams, from fifty to five hundred feet in length, and forming ponds which cover from a quarter of an acre to sixty acres of land, besides many others of smaller dimensions. The height of these dams is rarely less than two or more than six feet, although there is one, on a tributary of the Pishikeeme River, which is constructed in a gorge between high hills, and measures twelve feet in vertical height, "with a slope of interlaced poles on its lower face upwards of twenty feet in length." Connected with each of the ponds which have been produced by the dams are usually from two to eight lodges and burrows, situated either upon the edge of the pond or upon islands within it. The beaver is a strict monogamist, and rears his family in the lodge, retiring into the donjon-keep of his burrow only in cases of extreme peril. These very curious works are minutely described by our author, and illustrated by a series of engravings made from photographs. Mr. Morgan also gives the most satisfactory account that we have ever seen of the canals which the beaver excavates for the purpose of transporting to its habitation the winter supplies of "wood-cuttings" on which it sub-

sists. They average about three feet in width and in depth, and are frequently six hundred feet in length. Changes of level are ingeniously remedied by locks. The conception and execution of such enterprises presuppose a very high degree of foresight and intelligence.

The eighth chapter treats of the various modes of trapping the beaver, which are of course based upon an intimate knowledge of the animal's personal habits. In conclusion, we have a chapter on "Animal Psychology," in which many interesting facts and deductions are presented bearing on the metaphysics of the subject. Mr. Morgan advocates the claim of his beavers to "a thinking and reasoning and perhaps an immortal principle," with enthusiasm at least, if not with success. He is not disposed to be jealous of *ἀλογα ζῶα*, nor to think that it detracts at all from his own intellectual prerogatives as a talking being to concede to these intelligent mutes whatever "fragments of soul and tatters of understanding" they may furnish evidence of possessing. His volume contains some curious scraps of "beaver lore," of which the following may serve as a specimen. When the young beavers attain maturity, they are sent out from the lodge; if they fail to mate, they are allowed to return to the domicile, and remain till the ensuing summer; but, as a mark of parental disapprobation, they are put to hard labor in repairing the dam. They are then sent away again; if they fail a second time to mate, they are not permitted to return, but become thenceforth "out-cast beavers." The Indians and trappers firmly believe in the existence of such a class of Pariah beavers; and even Mr. Morgan seems to indorse the legend, when he suggests that they "are probably such beavers as, having lost their mates, refuse afterwards to pair. A similar story is the fiction of the slave beavers, related by Zacharia Ben Mahmood Kazwyny, an Arabian naturalist of the thirteenth century.

The book is altogether one of the most valuable and interesting recent contributions to Natural History.

10:—*The Voice in Singing.* Translated from the German of EMMA SEILER, by a Member of the American Philosophical Society. Philadelphia: J. B. Lippincott & Co. 1863. 16mo. pp. 168.

THIS little book is worthy of the most thorough criticism, which is already saying much for it. It is an attempt "to bring into harmony things which have always been treated separately,—the science and the art of singing": an attempt begun in the right spirit, cautious,

candid, prompted alike by love of beauty and of truth, and carried through in quiet earnest. And here is the simple story of results, in which much that is new is reported without egotism, and more anxiety is shown that the new knowledge may not be misused than to win credit for discovery. It is not a manual of singing, and does not profess to teach the art. It is a memoir embodying results of scientific observation while yet fresh, and pointing out their practical value; abounding, for the rest, in pregnant hints of what has been lost in the once noble art of song, and how it may be won back, and what good singing is. Beyond that, too, it has another charm, in that it is the record of a life's devotion, wherein all is set down so simply and so clearly, with such single wish that all may learn, as to give it unconsciously a beauty and a value as a literary production. The unpretending little book is really in its way a work of art, and, if only in that sense, was worthy to find a translator in the accomplished "Member of the American Philosophical Society" who has done so excellent a service in introducing it to the American reader.

Madame Seiler is a German lady, who to a musical character as such unites rare scientific attainments. After studying with the best masters, German and Italian, and singing with favor in concerts, she thought herself qualified to teach; but, more conscientious than most teachers, she was unwilling to proceed in the special culture of individual voices in the dark. Seeking light in schools, she found contradiction and confusion; doctors disagreed; each had a system of his own, with plentiful lack of reasons; no two used terms alike; in the jargon about registers, &c., all was bewilderingly vague, as every one who goes from method to method, from master to master, seeking to learn to sing, is pretty sure to find. Losing her voice at last (under an eminent teacher), she turned her attention to the piano, but without ceasing to pursue the knowledge of the human voice, as she indeed showed by choosing for her piano-teacher old Wieck, of Dresden, Clara Schumann's father, who is at the same time one of the wisest singing-masters of the day. There, too, she learned what she could by hearing Jenny Lind, in whom almost alone the great tradition lived. In Italy, the land of song, and in the schools of France, she also tarried, only to find "no sure and radical knowledge." Finally, the scientific instinct hinted of a surer way, and she sought the counsel of Professor Helmholtz, at Heidelberg, the great explorer of the natural laws of musical sound, from whom Tyndall draws so much which he has popularized in his delightful "*Lectures upon Sound.*" Under his guidance she devoted herself to a long and patient observation, by means of the laryngoscope, of the physiological processes that go on in the larynx

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