the past three years. There are some 50 folding boxes, and some half dozen drawers of pinned and mounted specimens. These consist chiefly of exotic species, and mostly of the showier Lepidoptera sent to the museum because of their brilliancy, and without name. There are also about 100 bottles of various sizes, containing alcoholic material, much of it exotic, and considerable material of value as illustrating insect architecture. A rough estimate shows about 20,000 specimens, and 2,000 species not in the other collections.

Exhibit collection of economic entomology. — This collection, prepared for the New Orleans exposition, and a catalogue of which has been published, will be deposited in the museum. It is made up of the following sections: 1°. Insects injurious to agriculture (arranged according to the particular plant, and the particular part of the plant, affected). 2°. Insecticides. 3°. Insecticide machinery, and contrivances for destroying insects. 4°. Bee-culture. 5°. Silk-culture.

From the above statement it is evident that there are already something like two hundred thousand mounted specimens in the national collection, comprising some twenty-six thousand distinct species. This, together with the vast amount of alcoholic material already indicated, will serve to show its fulness.

REPORT OF THE POINT BARROW STATION.

THIS volume, which contains the report of Lieut. Ray's party at Point Barrow, 1881–83, is notable in several respects, and creditable to all concerned. It has been prepared by Lieut. P. H. Ray, U.S.A., and Prof. John Murdoch of his party, with the assistance of several experts. It is not necessary to rehearse the object and relations of the expedition, which have been repeatedly referred to in the pages of *Science*. The report begins with a statement of the orders and instructions under which the work was done. This is followed by a narrative by Lieutenant Ray of the transactions at Point Barrow, or rather the station Uglaämi near the Point, of his explorations of the Meade River, and of the voyage to and from the station. This narrative is unpretentious and interesting, and terminates with a hearty recognition, by the commander, of the qualities shown by the members of his party during the monotony and privation of their long exile. Lieutenant Ray also furnishes an ethnographic sketch of the natives of Point Barrow, which will be found entertaining reading, and is illustrated by some excellent heliotypes,— the best, indeed, we have seen from photographs made in this part of the arctic regions. They give very satisfactory views of the station, the grounded ice, the natives of Uglaämi, and of the village of Iliūliūk, Unalashka, at which the expedition touched. There is also a census and vocabulary of the Innuit of Uglaämi, and a list of the ethnological specimens obtained by the party, to the illustration of which several plates are devoted. Part iv. contains the natural history prepared by Professor Murdoch, assisted by Professors Asa Gray and C. V. Riley, Messrs. Fewkes, Dall, and others. The Innuit name of each animal is appended when known. The mammals, birds, and fishes are treated by Murdoch, and illustrated by two very successful colored plates of the beautiful rosy gull, Rhodostethia rosea. Professor Riley contributes some notes on the scanty representatives of insects; Professor Gray, others on the plants; Fewkes and Dall report on the acalephs and mollusks respectively; while Murdoch discusses the other marine invertebrates, especially the crustacea, of which some new species are described and illustrated. With the mollusks is given a heliotype plate of some critical species of Buccinum, with magnified drawings of the minute surface sculpture. The collection afforded several new forms of shells. There are notes on the collecting stations, and a useful bibliography of works consulted.

The fauna, as might be expected, is purely arctic, and has little in common with that of the North Pacific.

The meteorology, including auroral observations, follows, and naturally occupies many pages. Mr. C. A. Schott, of the U. S. coast survey, reports on the magnetics, a field where he is *facile princeps*. The tidal observations are given in full, with an illustration of the apparatus used. The rise and fall of tide is only six or seven inches, but during the time observations were carried on the level of the sea varied some three feet, a change due probably to differences of atmospheric pressure. The report closes with some observations on ground currents and on the thickness of the ice. The maximum of thickness was five feet two inches on the sea, reached in March, and six feet two and a half inches on the quieter surface of an adjacent lagoon, reached in May. There is a fair index. The preceding summary will indicate how rich a store of information the report affords for students of arctic matters, though some very valuable material is still in course of elaboration for future publication. Space fails us to discuss the questions arising from the investigation of the flora and fauna. It is evident, however, that so successful a sojourn and safe return, so

Report of the international polar expedition to Point Barrow, Alaska. Washington, *Government*, 1885. 695 p., illustr. 4°.

satisfactory collections, and so prompt and useful a report, could not have come about without qualities of a high order in both the party and its chief. That the magnetic and astronomical observations were less precise than could be wished seems to have been the result of circumstances beyond the control of the members of the party.

HORSE-BREEDING.

M. ALASONIERE has written a very sensible little book upon horse-breeding, which has been honored with a medal by the French national agricultural society. He gives first a discriminating account of the points which mark a good horse, and then proceeds to characterize the two principal equine types, *speed* and *strength* being their respective characteristics, or, according to his more elaborate definition, 'type à étendue de contraction' and 'type à intensité de contraction.' His central idea as to the breeding is that the two types should not be mingled, because in the offspring incongruity results, one part of the animal inheriting its qualities from the mother, another part from the father. The wisdom of this precept he enforces by a discussion of the rules to be followed for the amelioration by breeding of special parts of the animal, and maintains that injudicious mixing of the two types produces horses of an incongruous build. To put the matter more bluntly, to get good colts the mare and stallion should resemble one another, else the colt will be a hodge-podge of qualities not harmonious.

The treatise is pleasantly written, and, though not properly a scientific work, is still valuable for, if we may be pardoned the phrase, its good horse sense, and we take pleasure in commending it to the notice of those engaged in rearing horses in this country.

ELECTROTECHNICAL HANDBOOK.

DR. KITTLER'S book, of which the first part of vol. i. has just appeared, will be welcomed by every one who has to do with any of the applications of electricity to the arts. It begins with a consideration of the phenomena and laws of induction, giving particular attention to the special cases that are of importance in the operation of the telephone and dynamo-machine, and then proceeds to discuss at length the various separate parts of the dynamo-machine, and indicates the points especially to be observed in their construction. The circumstances influencing the magnetization of soft iron — as the dimensions of the piece, the strength of the magnetizing current, and the quality of the iron — are next analyzed. Most of the remainder of that portion of the book as far as issued is occupied by a lengthy and detailed description of the principal forms of electrical measuring instruments. Their theory and construction are somewhat minutely considered, and most of the important special forms of instrument are figured. A list of a few of these will best show the character and completeness of the work. We notice, among others, Kohlrausch's bridge for use with a telephone, Siemens's modification of Thomson's bridge for measurement of low resistances, several forms of Wiedemann's galvanometer with copper dampers, Obach's cosine galvanometer, Siemens and Halske's convenient form of Thomson's mirror galvanometer, and D'Assarval and Deprez's aperiodic galvanometer. All of the leading forms of current and potential galvanometers for technical purposes are described, including several which we have not seen elsewhere, except in the original papers.

The work is written (as should be the case with a work of this kind) for students possessing a good knowledge of physics and mathematics. It would be of great advantage to American students of electrotechnics if some of our publishers would issue a translation of this work. We are sure that it would meet a much-felt want.

Amélioration de l'espèce chevaline par des accouplements raisonnés. Par L. ALASONIERE. Paris, *Baillière*, 1885. 15+156 p. 8°.

Handbuch der elektrotechnik. Bearbeitet von Dr. E. KITTLER. Stuttgart, *Enke*, 1885. 8°.

FROM PALERMO TO TUNIS.

ONE of the pleasantest of the many delightful trips aside from the beaten track—to which Americans in Europe carefully cling—is that from Naples to Tunis by way of Palermo and Malta. Besides seeing the Sicilian capital—a splendid city in itself and renowned throughout Italy for the beauty of its women—and Malta, the dwelling place of one of the most remarkabls races of the Mediterranean, one gets a glimpse of oriental life in all its filth and picturesqueness for a fraction of the time and money required for a visit to Cairo or Constantinople.

With regard to Malta, the fact which most impressed itself upon M. Melon's note-book—for this little volume pretends to be nothing but a collection of notes—was the signal failure of the English to assimilate the native population. To use his own words: "After eighty years of domination the line of demarcation between the Maltese and the English, their masters, is as sharply defined as on the first day." The greater

De Palerme à Tunis. By PAUL MELON. Paris, *Plon, Nourrit & Cie*, 1885. 212 p., illustr. 12°.