

The measured precipitation averaged twelve inches and a quarter, to which Mr. Nelson estimates a correction of one-half more should be added for unmeasurable drizzle and blown snow. The record and discussion of the aurora is a valuable contribution to the subject, and cannot be summarized. Thunderstorms are almost unknown. Lightning was observed but twice, and no thunder was heard during the whole period. It is referred to as reported common on the upper Yukon in summer; but in 1865-68, by the explorers of the Telegraph expedition on the upper part of the river, thunder and lightning were not observed on a single occasion. There are but two seasons at St. Michaels, — winter (October-May) and summer (the remaining five months). The sea is open until about Oct. 15; and the ice disappears in the spring, usually in early June. The tides are small, but over the shallow sea adjacent the rise in level due to gales is often sufficient to submerge the marshy shores for miles inland. Gardening is not a success, except for turnips, radishes, and lettuce. The earliest birds, chiefly geese, begin to arrive in April; and the migration continues to June, the main body of birds arriving between May 15 and 25. Most of the birds leave for the south in August, and the first sharp frost of September sends away the laggards.

— On the 1st of January, 1883, there were in existence 79 societies of geography, distributed all over the world, with about 38,000 members.

— The American society of mechanical engineers met at Cleveland, O., June 14, President E. D. Leavitt, jun., of Cambridge, Mass., in the chair. Eighty members were present, and fifty-four were elected, raising the total membership to four hundred and sixteen. The papers were generally short, plain, and practical. Mr. J. K. Holloway described a steam starting gear for throwing marine engines 'off the centre.' It consists of a steam-cylinder and a friction-wheel on the main shaft, which can be actuated by the auxiliary steam-cylinder. The device works either way, and may be applied repeatedly if necessary. Mr. Charles N. Comly detailed his experience with lubricating materials, resulting in the substitution of grease for oil. Other members had found grease the cheaper lubricant, but had observed that it had a much higher coefficient of friction than oil. Mr. J. E. Sweet described a new method of casting iron pipe having flanges, making chilled flange-faces and cored bolt-holes. Other papers remain to be reported. During the session, it was announced that an honorary degree had been conferred on President Leavitt by the Stevens institute of technology.

— W. H. Edwards announces that he will not, at present, complete the Synopsis of species commenced in the tenth part of his Butterflies of North America, but substitute for it a mere list of species, which will be issued with the next (concluding) part of the second series.

#### RECENT BOOKS AND PAMPHLETS.

*Annuaire de l'électricité pour 1883.* (1re année), par A. Révérend. Paris, *Gauthier-Villars*, 1883. 216 p., illustr. 8°.

*Blanchet.* Notice sur la naturalisation à Bayonne d'une nouvelle plante exotique. Dax, *impr. Justère*, 1883. 15 p. 8°.

*Delfau.* De la maladie de la vigne causée par le phylloxéra et de son traitement efficace, facile et économique. Perpignan, *impr. de l'Indépendant*, 1883. 34 p. 8°.

*English, T. Alfred, Haussen, C. Julius, and Sturgeon, J.* Report on a scheme for supplying compressed air motive-power in the town of Birmingham; with tables and formulae for calculating the useful effect obtained from compressed air, and examples and diagrams showing the application thereof; with confirmatory report by Prof. H. Robinson. New York, *Spon*, 1883. 60 p., illustr. 4°.

*Farmer, E. J.* The resources of the Rocky Mountains; being a brief description of the mineral, grazing, agricultural, and timber resources of Colorado, Utah, Arizona, etc. Cleveland, 1883. illustr. 8°.

*Forbes, P. R.* Sciences and spiritualism. Paris, *impr. Schaeber*, 1883. 16 p. 8°.

*Forestier, C.* Parallèle entre l'instruction des sourds-muets par le langage des signes et leur enseignement par l'articulation artificielle, suivi de quelques observations sur la méthode du célèbre Périère et sur les résolutions qu'a votées contre l'enseignement par le langage des signes le congrès international tenu à Milan du 6 au 12 septembre 1880 pour l'amélioration du sort des sourds-muets. Lyon, *impr. Pitrat*, 1883. 8+90 p. 8°.

*Frankland, P. F.* Agricultural chemical analysis. Founded upon 'Leitfaden für die agriculturchemiker,' von Dr. F. Krockher. London, *Macmillan*, 1883. 320 p. 8°.

*Guenot, C.* Les chinois et les indous. Limoges, *Barbou*, 1883. Bibliothèque morale. 87 p. 12°.

*India-rubber and gutta-percha and their cultivation.* London, *Haddon*, 1883. 8°.

*Jaffré, P.* Théorie complète élémentaire des occultations. Saint Nazaire, *impr. Fronteau*, 1883. 24 p., pl. 4°.

*Keeping, W.* The fossils and paleontological affinities of the neocomian deposits of Upware and Brickhill; with plates: being the Sedgwick prize essay for 1879. London, *Cambridge warehouse*, 1883. 8°.

*Knight, D.* Morphology of the vertebrata. With plates. London, *Dryden*, 1883. 8°.

*Kuropatkin.* Kashgaria (Eastern or Chinese Turkestan): Historical, geographical, military, and industrial. Translated by Major Gowan. London, *Thacker*, 1883. 8°.

*Ladureau, A.* L'acide sulfureux dans l'atmosphère de Lille. Lille, *impr. Danel*, 1883. 8 p. 8°.

*Leplay, H.* L'Osmose et l'osmogène Dubrunfaut dans la fabrication et le raffinage des sucres. Paris, *impr. Dubreuil*, 1883. 104 p. 8°.

*Macrobe, A.* La flore pornographique, glossaire de l'école naturaliste extrait des oeuvres de M. Émile Zola et de ses disciples. Paris, *Doubletlaerie*, 1883. 230 p., illustr. 18°.

*Merrifield, J.* A treatise on navigation, for the use of students. London, *Longmans*, 1883. 306 p. 8°.

*Miller, W.* The heavenly bodies: their nature and habitability. London, *Hodder*, 1883. 354 p. 8°.

*Murgue, Daniel.* The theories and practice of centrifugal ventilating machines. Translated and with an introduction by A. L. Steavenson. New York, *Spon*, 1883. 81 p. 8°.

*Owen, T. C.* Notes on cardamon cultivation. London, *Haddon*, 1883. 8°.

— The cinchona planter's manual. London, *Haddon*, 1883. 8°.

*Pickering, E. C.* Elements of physical manipulation. Parts 1, 2. London, *Macmillan*, 1883.

*Rowan, T.* Disease and putrescent air: some principles which must govern the efficient ventilation of sewers, and the effective hygienic treatment of sewer-gas; also the sanitary ventilation of house drains and connections. New York, *Spon*, 1883. 47 p. 8°.

*Roy, C.* Destruction des phylloxéras par le sulfure de carbone au moyen des cubes gélatineux, exposé scientifique et pratique. Bordeaux, *Feret*, 1883. 40 p. 8°.

*Scientific Californian.* Vol. 1, no. 1. San Francisco and Oakland. 14 p., illustr. 4° m.

*Scott, J.* Draining and embanking: a practical treatise embodying the most recent experience in the application of improved methods. (Weale's series.) London, *Lockwood*, 1883. 132 p. 12°.

*Smyth, W. W.* Evolution explained. London, *Stock*, 1883. 8°.

*Watt, A.* The history of a lump of chalk: its family circle and their uses. London, *A. Johnston*, 1883. 96 p., illustr. 12°.

*Witz, A.* L'École pratique de physique, cours de manipulations de physique préparatoire à la licence. Paris, *Gauthier-Villars*, 1883. 14+506 p., illustr. 8°.