annual rainfalls, to 1849, while the temperature record begins in 1871. The warmest month at San Francisco is September, with 60.9°, the coldest is January, with 50.1°. The highest temperature ever recorded was 100°, on June 29, 1891, and the lowest was 29°, on January 15, 1888. A comparison of the observations at San Francisco with those made at the Weather Bureau Station at Mt. Tamalpais (2373 ft.) brings to light several interesting facts. During June, 1899, the temperature *rose* at the average rate of 1° in every 203 feet of elevation between San Francisco and the mountain station. Fogs seem to occur at times of steep inverted gradients, when the temperature at 2500 feet is considerably higher than at sea level. The annual rainfall is 23 inches. The largest yield of crops follows a generous rainfall in March and April. The average number of clear days is 149; of partly cloudy days, 137, and of rainy days, 69.

KÖPPEN'S KLIMALEHRE.

KÖPPEN'S *Klimalehre* is a compact summary of the principles of climatology. It is a small octavo volume of 122 pages and 7 plates, and therefore cannot for a moment be compared with Hann's *Handbuch der Klimatologie* as regards completeness of presentation and breadth of view. Köppen's little book will, however, serve very well for those who wish to learn something of general climatology without going far into the subject. Considering the very limited size of the volume the matter is admirably presented. The book appears in the *Sammlung Göschen* (Leipzig, 1899. Price, 80 Pfgs.), in which collection there has already been published Trabert's *Meteorologie*, also an excellent brief discussion of the essential portions of the subject with which it deals.

DESTRUCTION OF BIRDS BY A HURRICANE.

Nature for April 5th notes a remarkable fact in connection with the West Indian hurricane of September, 1898. It appears that before the hurricane one of the tamest and commonest birds on the island of St. Vincent was a small humming-bird, but none of these birds have been seen since September, 1898. Other humming-birds, which were formerly less common than the one now missing, are still to be seen in St. Vincent, but in diminished numbers. The bird which has thus apparently been exterminated was the smallest of the three species known on the island, and hence probably also the most easily killed.

THE JUNGFRAU RAILWAY AND MOUNTAIN SICKNESS.

AN interesting note in connection with the physiological effects of diminished pressure at high altitudes is contained in an article on the Jungfrau railway, published in the *Engineering Magazine* for April. The work of construction is now being carried on very largely by Italians, but when the tunnel reaches an altitude of about 3000 meters it is considered almost certain that Swiss mountaineers will have to be employed. The latter will, it is believed, be far better able to do the necessary hard labor at the greater altitudes.

A REMARKABLE DIURNAL RANGE OF TEMPERATURE.

Ciel et Terre, for April 16th, contains a record of an extraordinary diurnal range of temperature observed in Mongolia during the year 1898 by the traveller M. Zichy. At Urga the thermometer at 5 A. M. stood at 30.2°, while the temperature at noon was 105.8°.

R. DEC. WARD.

HARVARD UNIVERSITY.

THE CONGRESSES OF THE PARIS EXPOSITION.

MORE than one hundred and fifty International Congresses, dealing with various subjects of scientific, industrial and social importance, are to be held this summer in Paris, and will form no small part of the interest of the Exposition, supplementing as they do the exhibits, furnishing the theory, as the exhibits set forth the accomplishments, of art and industry.

The delegates will be divided into three classes, those who officially represent the Government, the representatives of local and national organizations, and those who attend out of personal interest purely, the two latter classes paying a membership fee varying usually from two to five dollars. As all Congresses, even those of a permanent character of long standing, such as the Congresses of Medicine, Geol-

ogy and Chemistry, will be held this year under the auspices of the Exposition, many of them meeting within the Exposition grounds in the Palais des Congrès erected especially for this purpose. The official delegates will be accredited by the Commissioners General, acting on behalf of the president or monarch of their respective countries.

Commissioner Peck has recognized the importance of this feature of the Exposition and the permanent value which comprehensive reports of the deliberations of these bodies would represent, and with this idea in view a systematic propaganda has been carried on under the direction of Professor J. Howard Gore, of Columbian University, Washington, D. C., as Director of the Department of Organization of International Congresses, with the result that about one hundred and fifty persons, eminent in their several specialties, have been accredited as delegates. In this work the Governmental Departments have been first consulted, then local and national organizations and individuals.

It is suggested that all men of science who attend these congresses, in whatever capacity, register at the office of the Director, at No. 20 Avenue Rapp, Paris. Those in charge will take pleasure in giving all information in their possession concerning the programs, places of meeting, proposed fêtes and excursions in connection with the Congresses, etc., and may thus be able to put persons with whom they have not previously corresponded, in touch with such Congresses as may be most congenial and profitable.

We have already published details regarding many of the congresses but the following list giving the complete list in chronological order will prove useful to those visiting the Exposition this summer.

May 25–27. Horticulture.
June 4– 7. Forestry.
4– 7. Movable Property.
8–11. Joint Stock Companies.
11–13. Landed Property.
11–13. Aid Societies of Working Youth.
14–16. Teaching of Agriculture.
14–16. Numismatics.
18–21. Comparative History.
18–20. Agricultural Stations.
18–21. Cheap Dwellings.
18–25. Mines and Metallurgy.
18–23. Women's Work and Institutions.
20–23. Viticulture.
21–23. Cattle-feeding.
25–30. Insurance.
25–30. Actuaries.
25–30. Labor Accidents and Society Insurance.
26–30. Ornithology.
July. Chronometry.
1– 7. Agriculture.
8. Agriculture Co-operation.
8–10. Peoples' Credit Bank. (Loan Societies, etc.)
9. Aeronautics.
9. Automobiles.
9–13. Prisoners' Aid Societies.
9–16. Testing of Materials.
10–18. Profit-Sharing.
11–13. Workmen's Co-operative Productive Associations.
15–18. Profit Sharing.
16–18. Steam Engines, etc.
16–20. Teaching of Social Science.
17–23. Life Saving.
18–21. Commercial Schools.
18–21. Homeopathy.
18–22. International Co-operative Alliance.
19–21. Naval Architecture and Construction.
19–25. Applied Mechanics.
23–28. Meteorology.
23–28. Professional Medicine.
23–28. Photography.
23–29. Commerce and Industry.
23–28. Industrial Property Right.
23–31. Applied Chemistry.
24–29. Teaching of Living Languages.
30–Aug. 4. Architecture.
30–Aug. 4. Colonial Sociology.
30–Aug. 4. Regulation of Customs.
28–Aug. 3. Navigation.
30–Aug. 4. Tariff Regulations.
30–Aug. 4. Higher Education.
30–Aug. 5. Poor Relief.
30-Aug. 5. Public and Private Charities.
31–Aug. 4. Comparative Law.
August. Music.
Municipal Art
Stage.
2– 8. Pharmacy.
2– 5. Primary Education.
2– 5. Secondary Education.
2– 7. Philosophy.

2- 9. Medicine.
2- 9. Dermatology.
5- –. Blind.
6- 8. Deaf Mutes.
6- 8. Anti-Slavery.
6- 9. Housing.
——. Red Cross.
6-11. Colonial.
6-11. Mathematics.
6-11. Physics.
6-11. Technical and Industrial Education.
8-14. Dentistry.
9-15. Stenography.
9-11. Educational Press.
10-17. Hygiene and Demography.
10-18. Bibliography.
12-14. Alpinists.
12-15. Hypnotism.
16-28. Geology.
18-25. Electricity.
20-25. Anthropology and Prehistoric Archæology.
22-25. Psychology.
25-Sept. 1. Ethnography.
27-31. Economic and Commercial Geography.
29-Sept. 1. Teaching of Art.
29-Sept. 1. Teaching of Design.
29-Sept. 1. Teaching of Drawing.
30-Sept. 6. Physical Education.

September. Gold and Silver.
2-8. Ethnographical Sciences.
3-5. Basque Studies.
3-8. History of Religions.
5-8. Women's Rights.
6-9. Social Education.
10-12. Apiculture
10-12. Fruit Culture.
10-12. Folklore.
10-13. Popular Education.
14-19. Aquiculture and Fishery.
15-23. Railroads.
17-21. Americanists.
24-29. Fisheries.
25-28. Sunday Rest.
29-6. Peace.

October. 1-3. Maritime Law.
1-7. Botany.
Fireman (officers).
Medical Press.
Thread Numbering (textile).
Tramways (street railways).

ANTI-VIVISECTION LEGISLATION.

THE following letter from President Eliot of Harvard University to the Hon. James McMillan, Chairman of the Senate Committee of the District of Columbia, is printed in the medical journals:

HARVARD UNIVERSITY,
CAMBRIDGE, March 19, 1900.

Dear Sir:—I observe that a new bill on the subject of vivisection has been introduced into the Senate, Bill No. 34. This bill is a slight improvement on its predecessor, but is still very objectionable. I beg leave to state very briefly the objection to all such legislation.

1. To interfere with or retard the progress of medical discovery is an inhuman thing. Within fifteen years medical research has made rapid progress, almost exclusively through the use of the lower animals, and what such research has done for the diagnosis and treatment of diphtheria it can probably do in time for tuberculosis, erysipelas, cerebro-spinal meningitis, and cancer, to name only four horrible scourges of mankind, which are known to be of germ origin.

2. The human race makes use of animals without the smallest compunctions as articles of food and as laborers. It kills them, confines them, gelds them, and interferes in all manner of ways with their natural lives. The liberty we take with the animal creation in using utterly insignificant members of them for scientific researches is infinitesimal compared with the other liberties we take with animals, and it is that use of animals from which the human race has most to hope.

3. The few medical investigators can not, probably, be supervised or inspected or controlled by any of the ordinary processes of Government supervision. Neither can they properly be licensed, because there is no competent supervising or licensing body. The Government may properly license a plumber, because it can provide the proper examination boards for plumbers; it can properly license young men to practice medicine, because it can provide the proper examination boards for that profession, and these boards can testify to the fitness of candidates, but the Government can