Gmelin] dated Jan. 14, 1740. [A report of his activities.]

E. Steller's Catalogus Plantarum intra sex horas in parti Americae septentrionalis juxta promontorium Eliae observatarum anno 1741 die Iulii sub gradu latitudinis 59. This is the first list of Alaskan plants, about 150, and shows what an indefatigable collector Steller was.

The frontispiece is a copy of Catesby's blue jay, *Cyanocitta cristata,* of the eastern United States as contrasted with the western blue jay, *Cyanocitta stelleri.* It was the presence of this blue jay that made Steller sure North America had been reached; and this is an illustration of the remarkable memory Steller had, as he had once seen a copy of Catesby's work in St. Petersburg many years previously, before he started on his extensive travels.

Stejneger's narrative of the voyage of the *St. Peter* under Commander Vitus Bering[1] from Kamtchatka to Kayak Island, Alaska, until it was shipwrecked at Bering Island, then the making of the new but smaller *St. Peter* and its voyage to Kamtchatka is as interesting reading as Conrad.

The book is more than a biography of Steller, because it gives an account of the history, customs and manners of Russia in Steller's time, two hundred years ago, also much about the lives of his associates. It is well illustrated, but one regrets that it does not contain more plates. The author has left no stone unturned in acquiring facts about Steller's life, either by travel or by correspondence. It is concluded with a bibliography of two hundred and fifty-one titles, many of them in the Russian language. Steller's share in it is seventeen titles written in German and Latin, all the seventeen, except one, published posthumously. The index is complete both as to subject-matter and scientific names. The volume is a model of book-making, well bound and printed on an excellent grade of paper.

M. W. LYON, JR.

RAFINESQUE

Rafinesque's Kentucky Friends. By HARRY B. WEISS. Privately printed. Highland Park, New Jersey, 1936. 70 pp., 25 portraits. For sale by the author (price $7.50), Highland Park, New Brunswick, N. J.

DAVID STARR JORDAN thus characterizes the subject of this little book, "Brilliant, erudite, irresponsible, fantastic, he wrote . . . of the fishes of the Ohio River with wide knowledge, keen taxonomic insight, and a hopeless disregard of the elementary principles of accuracy. Always eager for novelties, restless and credulous, his writings have been among the most difficult to interpret of any in ichthyology."

Constantine Samuel Rafinesque (1783–1840) was born at Constantinople, the son of a French father and of a German mother born in Greece. His early boyhood was spent mainly in Italian seaport cities. In 1802 he came to Philadelphia, but returned to Italy in 1805. The next 10 years seem to have been spent in scientific work in Sicily, but in 1815 he came to America again. In Philadelphia he met Mr. John D. Clifford, of Lexington, Kentucky, and was invited by him to visit his home in Lexington. In May, 1818, Rafinesque started, making the trip by stage, boat and on foot. Clifford persuaded Rafinesque to come to live with him in Lexington and promised to procure for him a professorship in natural history in Transylvania University. Rafinesque returned to Philadelphia, shipped his books and collections to Lexington, and himself returned there in the summer of 1819.

Dr. Weiss devotes 14 pages of his book to Rafinesque's life in Kentucky: to his teaching in the university, to his scientific trips and collections and to his scientific writings and publications while there, and particularly to his relations with the people among whom he lived. Because of his exaggerated temperament, he was a very difficult person to live and work with, especially after he developed a persecution complex. But all this is set out in Dr. Weiss's sketch and need not be gone into further.

Rafinesque was a talented artist, as is vouched for by the 25 sketches which are reproduced in the book. He seems to have been in the habit of sketching his friends or acquaintances at any time and place. Among these sketches are drawings of his mother, sister, and either of his wife or her sister. The others are chiefly of men and women prominent in the political and social life of Lexington and of Kentucky. The unidentified portraits are mainly of girls and young women, possibly children of his friends.

One is disappointed not to find any record of the whereabouts of the original sketches. These sketches have little value to the man interested in Rafinesque's scientific work. But as documents in the history of Lexington and of Kentucky of the time covered by Rafinesque's life in Lexington they are of undoubted value.

E. W. GUDGER

IN HONOR OF PROFESSOR HONDA

Professor K. Honda Anniversary Volume. October, 1936. Sendai, Japan.

THIS volume of more than 1,100 pages is published in the series of Science Reports of the Tôhoku Imperial University, Sendai, Japan, as a tribute to Professor Kôtarô Honda, now president of the university,

[1] One member of the Danish family Bering, using the name Bierring, served in the American Navy during the Civil War, and his son was president of the American Medical Association recently.

on the completion of twenty-five years of his professorship. The Science Reports are so well known to scientists working along many varied lines that nothing need be said to emphasize and enlarge upon their value and worth. The present volume is an outstanding one. It signalizes not only the personal efforts and accomplishments of Professor Honda, but also the great contributions of his pupils in the university and in the world-renowned Research Institute for Iron, Steel and Other Metals.

Of the 97 papers, 24 are contributions from American and European workers. A wide range of subjects is discussed, including metallurgy, magnetism, mechanical properties of materials, chemistry, spectroscopy, x-rays, mechanics, mathematics, meteorology and instrument design. However, 54 of the papers deal with metallurgy and magnetism, reflecting Professor Honda's influence in these fields. Many of the papers, especially those by American and European contributors, are in the nature of theses summarizing work which has extended over a long period. For this reason, they should prove especially valuable for reference.

The volume contains a bibliography of the 167 scientific papers and 8 books written by Professor Honda and a brief biography. Unlike our own custom in similar volumes, no photograph is included.

LYMAN J. BRIGGS

SPECIAL ARTICLES

A RECENTLY ISOLATED STRAIN OF POLIOMYELITIC VIRUS

IN the winter of 1934 an outbreak of poliomyelitis with a high mortality rate occurred in Sacramento, California. Fresh cord from a fatal case was obtained through the courtesy of Dr. Paul Guttman, of the Sutter Hospital, and proved to contain poliomyelitic virus upon inoculation of a monkey. The animal became completely paralyzed and was sacrificed in 6 days after injection of 2 cc of the 10 per cent. suspension intracerebrally and 8 cc intraperitoneally. The virus could be transmitted in series to other monkeys, and since then has been carried successfully through eight generations. Because of the fulminating and severe course of the outbreak, largely among high-school students in Sacramento, it was thought of interest to make a comparison of this virus with the monkey passage strain originally received from the New York City Health Department, and with several others on hand, especially one (Jackson) that had previously been recovered during the summer of 1934 from a fatal case in San Francisco.

The disease in the monkey after intracerebral inoculation was clinically similar to that usually noticed with the monkey passage strain, increased temperature, excitability, tremor, staccato voice, followed by flaccid paralysis of the extremities and complete prostration within 6 to 11 days after injection. The incubation period was usually 6 to 7 days, similar to that of the more active passage strain, but in making comparison it should be recorded that 10 per cent. instead of 5 per cent. cord was generally used as the basic suspension. The former upon titration has proven viable in a 1–200 to 1–400 dilution. The passage strain on the other hand could be titrated to a dilution of 1–3200 from a 5 per cent. suspension, so that the more recently isolated strain lacked the higher infectiousness shown by the older adapted one. The Jackson also lacked this more active virulence, although on one occasion it was potent in a 1–800 dilution.

Recently Trask and Paul[1] have reported a slight variation in a strain of poliomyelitic virus isolated from a case in southern California during the same year, 1934. Their strain showed an affinity for the peripheral nerves with greater and more constant regularity than with the other strains tested. In like manner this new Sacramento virus also seemed to have this property, since it was found unexpectedly that very small quantities of filtered suspension could produce the disease with typical paralysis when given intradermally. In attempting to immunize 2 monkeys, one was given 0.5 and 1 cc of filtered virus (Berkefeld N filtrate), respectively, one week apart, and the other 0.2 and 0.6 cc, respectively, at a 9-day interval. Both animals developed poliomyelitis within a week after the second inoculation. At the same occasion five other animals were immunized to the active passage strain by the same route, being given larger doses (1 to 5 cc) of unfiltered material over a 5-week period without any casualties.

Cross neutralization tests were performed to determine any possible serological differences with the other strains. From previous experiments made at various times, no difference in cross immunity had ever been noticed between the monkey passage strain and several recently isolated human strains (N. Y. and Fl) kindly sent by the Rockefeller Institute and by Dr. J. R. Paul, of Yale University, respectively. Any differences were those of lower virulence or of inability to produce the disease unless with large doses.

Serum was obtained from 2 monkeys, Nos. 1334 and 1499. The former (1334) was immunized to the Sacramento strain of virus and the latter had recov-

[1] J. D. Trask and J. R. Paul, *Jour. Bacteriol.*, 31: 527–530, 1936.