le phosphate calcaire; les expériences suivantes ne me parassait lasser aucun doute a cet égard."

Nevertheless, v. Fellenberg in 1917[2] quoted Fremy as follows: "Deshalb vermutet Fremy, Pektose Könnte eine calciumverbindung des Pectins sein," and this seems to have become the generally accepted interpretation of Fremy's views pertaining to the constitution of pectose.

Most likely Fellenberg referred to views expressed by Fremy in 1839 when he made his first report on pectin to the Society of Pharmacy.[3] At that time he had not yet named the substance, because, as he says, it might well be that it would turn out to be nothing but pectin combined with lime. As noted above, he later satisfied himself that this view was not tenable, that pectose was in fact a new substance.

Because of its wide use for reference purposes it is especially regrettable that the first paragraph of the generally excellent review which M. H. Branfoot published in 1929[4] contains the following: "From this behavior Fremy concluded that pectose was probably an insoluble salt of calcium or potassium, giving rise to free pectin and bases when acted upon by acids." Probably because of being well acquainted with the above review T. N. Morris, on page 12 of his "Principles of Fruit Preservation," published in 1933,[5] states that "pectose was first recognized in the plant tissues by Fremy, who considered that it was an insoluble salt of calcium or potassium which gave rise to free pectin and bases when extracted with acids."

Meyers and Baker[6] in 1929 said "Chodnew, Payen, Fremy and other early investigators considered protopectin to be an insoluble calcium compound." Sloep (1928)[7] properly reports the views of Fremy, but unfortunately her thesis is printed in Dutch, and is therefore not so readily available to the general reader in this country.

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THREE RETURNS OF A BANK SWALLOW

SINCE 1923, Mrs. Stoner and I have banded in Iowa and New York State 5,576 young and adult bank swallows, *Riparia r. riparia.* Of these, 2,829 have been banded in the Oneida Lake, New York, region since 1928. Among the total of 147 returns that we have obtained from our bandings, only one individual has been recovered as many as three times, an interval of at least eight months having passed between each recovery.

A brief history of this bird, so far as it is known, is herewith offered as a contribution to the biology of this species.

Incubating adult bank swallow No. F 55924 was banded from a burrow in the south bank of Fish Creek about three miles east of Oneida Lake, New York, on June 2, 1932.

On May 26, 1934, this swallow was recovered (Return-1) as an incubating individual in the same colony and from a burrow a few yards north of the one occupied in 1932. Its body temperature registered 104.6° Fahr. and its weight was 14.4 grams. The burrow was 34 inches deep and 14 inches below the turf. This bird was now at least three years old.

On May 21, 1935, No. F 55924 was again recovered (Return-2) in the same colony as before and in a burrow a few feet from the one occupied by it in 1932. Its body temperature registered 106.0° Fahr. and its weight was 14.6 grams. Another adult occupying the burrow at the same time escaped us. The burrow was 18 inches deep, 6 inches below the turf and contained an unlined grass nest. This swallow was now at least four years old. Two days later it was recaptured from the same burrow, when its temperature registered 106.8 degrees and it weighed 17.0 grams. At this time also its mate, obviously a female, was captured and banded. Evidently, therefore, F 55924 was a male.

On May 22, 1936, No. F 55924, along with its *unbanded* mate, was recovered (Return-3), dead, in the same colony as before and in a burrow a few feet from the site of the one occupied by it in 1934. This burrow was 36 inches deep, 12 inches below the turf and contained an unlined nest.

The bodies of the dead swallows were first discovered on directing into the burrow, by means of a small hand mirror, a beam of light reflected from the sun. The nest and the remains of the birds were then removed with a long bent wire. Most of the fleshy parts as well as the crania and their contents had been devoured by a house rat not long before our arrival, for the remnants of the rodent's feast were fresh. We also discovered the remains of eight other adult bank swallows which had met a similar fate in this colony within a few hours preceding our visit. The culprit was observed in one of the burrows actually feeding upon the body of a swallow, but it successfully eluded our efforts to capture or kill it.

The essential known facts regarding bank swallow F 55924 may be briefly summarized as follows: Its known age at the time of death was 10 days less than five years; it had made at least five round-trip jour-

[2] *Biochem. Zeits.*, 85: 119, 1918.
[3] *Jour. Pharm.*, (2) 26: 591, 1840.
[4] "Food Investigation Special Report," No. 33, London: 1929, p. 1.
[5] Van Nostrand Company, 1933, p. 12.
[6] Bull. No. 160, Del. Agr. Expt. Sta., June, 1929, p. 3.
[7] "Onderzoekingen over Pectinstoffen en hare Enzymatische Ontleding." Delft, 1928, p. 21.

neys between its nesting ground and its winter quarters and nested four seasons—at least three of which were successive—in the same sector of the same colony; it had a different mate in 1935 and 1936; it was killed and partially eaten by a house rat in a burrow a few yards from the one occupied by it four years earlier.

NEW YORK STATE MUSEUM ALBANY, N. Y. DAYTON STONER

SPECIAL CORRESPONDENCE

FOUNDATION OF THE PONTIFICAL ACADEMY OF SCIENCES

THE Pontifical Academy of Sciences, which was founded on the 28th of October, 1936, is the last outcome of a long unbroken academic line. The original founder of the Roman Academy was Prince Cesi, who in 1603 had the idea of an organization designed to further knowledge by inquiry and discussion. He meant it, however, to lie within the Aristotelian frame of thought. His academy precedes those of Paris, London, Petersburg, the Caesare-Leopoldina and even the Florentine one of the *Cimento*. Less than any other, perhaps, it owes its idea to the Baconian *Nova Atlantis*; actually it was born of the fervor of a young Roman nobleman whom an ailing body and meditative seclusion helped to mature a vast design. Together with three friends, two Italians (and Umbrians, in fact, from his own province—Francesco Stelluti and Anastasio de Filiis)—and a Dutchman, Johan Heck, he conceived an institution whose name and general conception really harked back to Plato and to his academy, to this date the longest-lived educational institution of the world, as it lasted uninterruptedly for nearly nine centuries.

The dream of Federigo Cesi was more monastic and aristocratic than that inspired by Baconian practicality. His academy was meant essentially as a way of life and as an encouragement to disinterested research: "Through the creation we must reach again the Creator." The academicians were to be the "Lynx-eyed Ones"; their emblem was a lynx with the motto: "Sagacius ista."

The family of Federigo Cesi all but wrecked the plan in its inception, and went so far as to make it necessary for his friends to leave Rome; but after 1609 the academy grew and extended to international activity. At the same time there came an inevitable break with the Aristotelian tradition, a break not explicitly professed but simply due to the fact that the academy was alive to the urge of the times. They willingly gave hospitality to Galileo; in fact, it was they who printed his dissertation on the sun-spots, directed against the Aristotelian sticklers in 1610, and in 1623 they printed his famous polemical essay, "Il Saggiatore." After the death of Federigo Cesi the academy entered a period of eclipse and had to be reinstated by Benedict XIV, the energetic "Pope Lambertini," as the "Academy of the Nuovi Lincei"; but it does not seem to have achieved any results worthy of note until through the efforts of F. Scarpellini and the advice of Gaspard Monge, at that time a consul of the Roman Republic invented by Napoleon, it started life again at the beginning of the nineteenth century. It was, however, a brief flicker of life, mainly upheld by the Caetani family, who have an unbroken tradition of princely scholarship reaching to our age; and that flicker went out again under the adverse rule of Gregory XVI. Upon his advent in 1847, Pius IX reinstated the academy in its full title and belongings as the "Pontificia Accademia dei Nuovi Lincei" and gave it a stable seat; the academy encouraged the work of such astronomers as Secchi and Respighi. But its intellectual leadership came to an end with the capture of Rome in 1870. The Italian Government then took over the historic name for its National Academy, which was called "Accademia dei Lincei" and given a rôle similar to that of the French *Institut*. Thus the "Nuovi Lincei" was cut out of much of its natural field of activity and carried on a reduced existence, chiefly through the scholarly activity and munificence of Prince Baldassarre Boncompagni, the well-known historian of mathematics and founder of *Boncompagni's Bulletin*.

Leo XIII encouraged his sadly dwarfed academy and gave it another constitution, but it was reserved for the present Pope, himself a scholar, and an academic figure of great distinction, to reinstate it in its full working order. His right hand in this work was Father Gianfranceschi, a physicist and an able organizer. After his death the burden fell upon the Franciscan Father Agostino Gemelli, physiologist, rector of the University of the Sacred Heart at Milan and possessed of the most remarkable temperament for scientific leadership that the Roman Church has had for many years. The endowment was increased, a new seat was arranged in the Vatican Gardens, and a solemn session of inauguration was held on January 12, 1936.

For this rebirth the scholarly activities and deep interest in science of the present Pontiff might be a sufficient justification. As it happens, however, there may well have been contributory reasons of a different nature. The conciliation with the Italian state, while healing a breach which had lasted for almost sixty years, suddenly put back the Holy See into the condition of a temporal power in its own right, however diminutive its home (forty-four hectares of the City