Linn., 1758 (*paradisaeus* L.); *Sciaena* Linn., 1758 (*umbra* L. = *Cheilodipterus aquila* Lacép. as restr. by Cuvier, 1815); *Serranus* Cuv. (*Perca cabrilla* L.); *Stolephorus* Lacép., 1803 (*commersonianus* Lacép.); *Teuthis* Linn., 1766 (*javus* L.).

Names now current are not to be discarded unless the reasons for change show a clear-cut necessity.

OPINION 94. Twenty-two mollusk and tunicate names placed in the official list of generic names: The following names are hereby placed in the official list of generic names: MOLLUSCA: *Anodonta, Argonauta, Buccinum, Calyptraea, Columbella, Dentalium, Helix, Limax, Mactra, Mya, Mytilus, Ostrea, Physa, Sepia, Sphaerium, Succinea, Teredo.* TUNICATA: *Botryllus, Clavelina, Diazona, Distaplia, Molgula.*

OPINION 95. Two generic names of *Protozoa* placed in the official list of generic names: The following names are hereby placed in the official list of generic names—PROTOZOA: *Endamoeba, Trypanosoma.*

OPINION 96. Museum Boltenianum: The commission accepts the Museum Boltenianum 1798 as nomenclatorially available under the international rules.

OPINION 97. Did Hübner's Tentamen, 1806, create monotypic genera?—Hübner's Tentamen, 1806, was obviously prepared essentially as a manifolded manuscript, or as a proof sheet (cf. Opinion 87), for examination and opinion by a restricted group of experts, *i.e.*, in *Lepidoptera*, and not for general distribution as a record in Zoology. Accordingly, the conclusion that it was published in 1806 is subject to debate. Even if the premise be admitted that it was published in 1806, the point is debatable whether the contained binomials should be construed as generic plus specific names. Even if it be admitted that the binomials represent combinations of generic plus specific names, they are essentially *nomina nuda* (as of the date in question) since authors who do not possess esoteric information in regard to them are unable definitely to interpret them without reference to later literature. If published with more definite data at later dates, these names have their status in regard to availability as of their date of such republication.

C. W. STILES, *Secretary*
U. S. PUBLIC HEALTH SERVICE

PROFESSOR BARUS AND COLLOID CHEMISTRY

On reading over a paper entitled "Remarks on Colloidal Silver" published by that sterling investigator Carl Barus, of Brown University, in the *American Journal of Science* for December, 1894 (Vol. 47, p. 451–4), I am struck by the remarkable manner in which in so small a space he has foreshadowed so many of the subsequent developments of colloid chemistry. Thus aggregation and dispersion methods and the colloidal zone are well indicated in the following:

"Suppose a solid is dropped into an excess of its solvent. In order that the system may become a solution, the disaggregation must at least reach the molecule. In electrolytes it may go further as is evidenced by Arrhenius's celebrated factor 2. But, under other circumstances, may not the separation stop short *before* the molecule is reached; or conversely, may not the process of growth be arrested in virtue of an equilibrium of when a precipitate is being formed out of individual molecules forces when the particles formed consist of 2, 10, 100, or even 1000 molecules? To answer affirmatively is to find a home for the family of colloidals, and they will more nearly resemble solutions in proportion as the particles are smaller. Certainly the beam of light is no longer an available criterion, for the whole phenomenon is mapped out on a scale which is small even in comparison with the wave length of light."

His experiments on ultrafiltration are thus referred to:

"In the endeavor to pass compressed air through a wet porous porcelain septum into water, I was struck by the magnitude of the pressures necessary. Supposing I waited long enough to insure the transpiration of liquid, no flow of gas through the septum occurred for pressures of even in excess of 100 lbs., excepting at isolated points which were obviously the seat of fissures . . . [the superior limit of] $r = 18 \times 10^{-6}$ cm nearly, making the diameter ($2r$) of the pores smaller than the wave length of violet light. Schneider showed however that colloidal silver passes readily through such a septum whereas the alcoholic precipitate fails to do so. The particles are therefore respectively smaller and larger than the diameter given. If 10^{-8} cm be taken as the order of molecular dimensions, the size in question is at least 1,000 times as large, showing the aggregates to consist of the enormous number of 10^9 molecules at least. There is thus an abundance of room for particles containing (say) 100 molecules to the aggregate, and forming suspensions in water (colloids) in their general aspects hardly distinguishable from true solutions."

It is interesting to ask how great a pressure would force the water out of a septum just large enough to let the particles of the size in question (5×10^{-8} cm) pass. It would take several thousand atmospheres, and it is therefore quite impossible to test finer septa like animal membrane to the extent in question. Nevertheless if the attempt be made to *grade* porous clay septa, prepared by successive vitrifications, by the method given, I dare say that a range of mean

diameters of pores could be obtained, sufficient to answer many outstanding dimensional questions in relation to the colloidal state; but one should be prepared to exert pressures as high as 100 atmospheres."

He speaks of "the metallic optics of colloidal silver" as "a field of great promise" and one "to be looked to for decisive results, not only for silver but for other colloids." Zsigmondy's discovery of the ultramicroscope about five years later, brilliantly confirmed this prognostication.

The gradual dominance of chemical forces with increasing subdivision appears in the concluding paragraph:

"Of the two interpretations which may be given Carey Lea's brilliant discovery, the one originally advocated by Dr. Schneider and myself is to me intensely the more interesting. As an aggregate of excessively fine suspended particles, colloidal silver introduces a whole series of fascinating physical problems, subject to forces which as to their nature are almost tangible. Even in an ordinary case of sedimentation if I write

Muddy water + acid = acidulated water + mud,

the later body being precipitated, I have a chemical equation in embryo—an equation which so far as can now be discerned lacks stoichiometric precision, but which in its general character is undoubtedly a double decomposition. If the actuating forces be traced, they must lead by slow gradations up to affinity."

It will be a real service to science if Brown University will collect and publish the widely scattered papers of her emeritus professor of physics, as was done in Belgium with the work of Walther Spring, and by the University of Toronto with the work of Professor Wilson Taylor.

JEROME ALEXANDER

SYSTEMIC EFFECTS FOLLOWING THE STING OF A SPECIES OF EPYRIS

FOR the past three years reports have come to me from a family living on a more or less isolated delta farm in Clarksburg, California, regarding the activities of a tiny wasp which has become a pest because of its readiness to sting.

Before describing the disturbances caused by the sting, it might be well to state that, through the kindness of Dr. Frank Lutz, the wasp was identified by S. A. Rohwer as belonging to the genus Epyris and represents a species near *clarmontis* Kieffer. The wasps belonging to this genus are, as a rule, parasitic on lepidopterous larvae.

There are five members in the family, namely, the parents who are forty years of age and the children aged four, six and eight years. The parents are unusually intelligent and both college graduates and they are fully aware that only by accurate observations could any conclusions be drawn.

The wasps appear in fairly great numbers in the fall after a warm spell and invade the house where they get into the bedding and clothing, and sting when brushed or crushed by clothing or sheets against the skin, and only one instance is recorded where stinging occurred when apparently unprovoked. The sting is distinctly felt as a fairly sharp prick, decidedly less intense than a bee sting, but sufficiently so to make the youngest child cry. In every member is there a definite local reaction, namely, redness and swelling. In the oldest and youngest child no further manifestations occur, but in the parents and second child a decided systemic disturbance follows.

A few minutes after being stung, there is felt a numbness, often at the site of the sting, but at other times beginning at the finger tips. It remains localized for a few minutes and then gradually spreads and involves the entire body. In the mother there is an intense itching of the vulva and in the father an itching of the pubes. This is followed by a marked diarrhœa, not painful in the father, but resembling severe uterine cramps in the mother. The diarrhœa and cramps last for about ten minutes. The mother, who is an asthmatic, experiences no respiratory difficulty, but in the father who has never had an attack of asthma wheezing occurs occasionally. Accompanying these symptoms there is marked prostration, weakness and sweating. The duration of the attack is about half an hour. The second child becomes drowsy and is awakened with difficulty and wheezing occurs. He also recovers in about the same time as the parents.

On one occasion the father was bitten while visiting a neighboring camp and the effect was so severe that he was forced to lie down utterly helpless.

In the fall of 1926 there was a greater invasion of these wasps than usual and stinging was almost a daily occurrence. So bad were the effects that moving was contemplated.

It would be of considerable interest to know of similar reports. Unfortunately the attacks are of comparatively short duration and I have never witnessed the distressing effects. I am also unable to find any similar history among the neighbors, although they complain of the stings of these insects, but not the systemic disturbances.

There is little question in my mind, however, that the severe disturbances are caused by the stinging of these wasps. This conclusion is drawn on the following, namely, the experience of three years occurring only in the fall when the invasion of insects takes place, the finding of the insect shortly after