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*piensis* C.?). But my material is not complete enough to allow a conclusion in regard to a relationship.

In Jackson occurs a species, *Pleurotoma exsculpta*, n. sp., which differs from *Pleur. tenella* C., from Vicksburg, in having the ornamentation, especially the transverse striæ, more distinctly worked out and the canal shorter. The length of the canal of *P. tenella*, however, varies a little and I consider the two species to be related.

79. *Conus tortilis* C. and *Con. alveatus* C. are only slight variations of *Conus sauridens* C.

80. In Vicksburg occurs a new species, *Conus protracta*. It approaches in its form the genus *Conorbis*. The lower part is almost like that of *Conus sauridens* C., but it is a smaller species. The spire is elevated, forming the third part of the shell, is without revolving lines and has one or two smooth embryonic whorls more than *C. sauridens*. In Jackson occurs a similar form but with revolving lines on the spire, *Conus Jacksonensis*, n. sp. Probably both species are to be related to each other.

81. A species in Jackson, *Actæon annectens*, n. sp., is similar and related to *Act. punctatus* Lea, but it is smaller, has a more regularly rounded form than the Claiborne species generally has, and the fine transverse striæ are less closely set. The largest specimen moreover has an indistinct second fold above the larger first one.

84. From Claiborne I have a complete specimen of *Cylichna*, which belongs to the subgenus *Volvula*. A similar or identical species occurs in Jackson. After a comparison with my specimens of *Bulla radius* Desh. I am inclined to identify the American and French species. What Gabb describes as *Volvula Conradiana* from Texas must be nearly allied or identical.

In the table *C.* stands for *Conrad*, *Mr.* for *Meyer*.

TABLE SHOWING THE SUCCESSIONAL RELATIONS OF THE VICKSBURG, JACKSON AND CLAIBORNE SPECIES. THE SYMBOL > SIGNIFIES DECREASING IN ABUNDANCE IN THE DIRECTION TOWARD WHICH IT POINTS, AND [ ] THAT THE RELATIONS ARE DOUBTFUL.

	VICKSBURG.	JACKSON.	CLAIBORNE.
		1. <i>Foraminifera.</i>	
1	<i>Nodosaria obliqua</i> L. sp.	<i>Nodosaria obliqua</i> L. sp.	<i>Nodosaria obliqua</i> L. sp.
		2. <i>Bryozoa.</i>	
2		<i>Lunulites interstitia</i> Lea sp. >	<i>Lunulites interstitia</i> Lea sp.
3		<i>Discoflustrellaria</i> Bouéi Lea sp. >	<i>Discoflustrellaria</i> Jacksonensis Mr.
		3. <i>Corals.</i>	
4		<i>Turbinolia pharetra</i> Lea. <	<i>Turbinolia pharetra</i> Lea.
5		<i>Endopachys Macluri</i> Lea sp.	<i>Endopachys Macluri</i> Lea sp.
6		<i>Platytrachus nanus</i> Lea sp.	<i>Platytrachus nanus</i> Lea sp.

VICKSBURG.	JACKSON.	CLAIBORNE.
	4. Lamellibranchiata.	
7 Pecten (Poulsoni Morton ?) >	Pecten Lyelli Lea. > }	Pecten Lyelli Lea. }
9 Avicula Claibornensis Lea. (A. argentea C.)	Pecten nuperus C. > }	Pecten Deshayesi Lea. }
10 Arca (Byssarca) Mississippensis C.	Avicula Claibornensis Lea.	Avicula Claibornensis Lea.
11 Arca (protracta C. ?) sp.	Arca (Byssarca) Mississippensis C.	
12 Pectunculus arctatus C.	Arca rhomboidella Lea var.	Arca rhomboidella Lea.
13	Pectunculus arctatus C. (var.?)	Pectunculus arctatus C. (var.?)
	Pectunculus Broderipi Lea.	Pectunculus Broderipi Lea var.
14		flosus C. (P. flosus C.)
15 Nucula ovula Lea var. Vicksburgensis C. or? Nucula Vicksburgensis C.	Limopsis radiatus Mr.	Limopsis obliquus Lea sp.
	Nucula ovula Lea (var.?)	Nucula ovula Lea.
16	Leda mater Mr.	{ > [Leda plicata Lea sp.] > Leda mater Mr. (var.?) [Leda media Lea sp.]
17	Astarte sulcata Lea var. Jacksonensis Mr.	Astarte sulcata Mr.
18	Astarte Nicklini Lea. var. parvulus C. (A. parvulus C.)	Astarte Nicklini Lea.
19 Astarte parva Lea var. Vicksburgensis Mr.	Astarte (Micromeris) parva Lea.	Astarte (Micromeris) parva Lea
20 Alveinus minutus C.	< Alveinus minutus C. >	Alveinus minutus C.
21	Venericardia planicosta Lam.	Venericardia planicosta Lam.
22	Venericardia diversidentata Mr.	Venericardia rotunda Lea
23	Venericardia parva Lea var. Jacksonensis Mr.	< Venericardia parva Lea.
24	Venericardia inflator Mr. var. Jacksonensis Mr.	Venericardia inflator Mr.
25 Crassatella Mississippensis C.	?	Crassatella alta C.
26	Crassatella protexta C. var. flexura C. (Cr. flexura C.)	Crassatella protexta C.
27 Lucina Mississippensis C.	Lucina Mississippensis C.	
28 Lucina perlevis C.	Lucina perlevis C.	
29	Lucina papyracea Lea.	Lucina papyracea Lea.
30 Lucina sp.	Lucina sp.	
31 Cardium diversum C.	Cardium Nicolleti C.	
32	Cytherea minima Lea.	Cytherea minima Lea.
33	Cytherea Jacksonensis Mr.	< Cytherea Hydi Lea.
34 [Cytherea sobrina C.]		Cytherea comis Lea.
35 Tellina Vicksburgensis C. <	Tellina Vicksburgensis C. var. robusta Mr.	
36	Periploma Claibornensis var. parva Mr.	Periploma Claibornensis Lea.
37 Mactra (funerata C.?)	Mactra (funerata C. var.?)	Mactra pygmaea Lea.
38 Mactra sp.	Mactra inornata Mr.	Mactra inornata Mr.
39	Corbula Willistoni Mr. <	Corbula gibbosa Lea.
40	Corbula Murchisoni Lea var. bicarinata C. (C. bicarinata C.)	Corbula Murchisoni Lea.
41	Corbula Alabamiensis Lea var. densata C. (C. densata C.)	Corbula Alabamiensis Lea.

VICKSBURG.	JACKSON.	CLAIBORNE.
	<i>5. Glossophora.</i>	
42 Dentalium alternatum <i>Lea.</i> ( <i>D. Mississippiensis C.</i> )	Dentalium alternatum <i>Lea.</i>	Dentalium alternatum <i>Lea.</i>
43 Dentalium microstria <i>Heilpr.?</i>		Dentalium microstria <i>Heilpr.?</i>
44 Dentalium subcompressum <i>Mr.</i>	Dentalium subcompressum <i>Mr.</i>	
45	Dentalium Danai <i>Mr.</i>	Dentalium <i>Lea</i> <i>Mr.</i>
46 Cadulus Vicksburgensis <i>Mr.</i>	Cadulus Jacksonensis <i>Mr.</i>	[Cadulus compressus <i>Mr.</i> ]
47 Teinostoma Verrilli <i>Mr.</i>	Teinostoma Verrilli <i>Mr.</i>	Teinostoma subrotunda <i>Mr.</i>
48	Solarium bilineatum <i>Lea.</i>	Solarium bilineatum <i>Lea.</i>
49	Solarium ornatum <i>Lea</i> var. acutum <i>C. (S. acutum C.)</i>	Solarium ornatum <i>Lea.</i>
50 Solarium triliratum <i>C.</i>	Solarium bellastriatum <i>C.</i>	Solarium Henrici <i>Lea</i>
51 Turritella carinata <i>Lea.</i> ( <i>T. Mississippiensis C.</i> )	Turritella carinata <i>Lea.</i>	Turritella carinata <i>Lea.</i>
52	[Turritella alveata <i>C.</i> ]	Turritella lineata <i>Lea.</i>
53 Trochita trochiformis <i>Lea.</i>	Trochita trochiformis <i>Lea. (T.</i> <i>alta C.)</i>	Trochita trochiformis <i>Lea.</i>
54	Hipponyx pygmæa <i>Lea</i>	Hipponyx pygmæa <i>Lea.</i>
55 Sigaretus Mississippiensis <i>C.</i>	Sigaretus Mississippiensis <i>C.</i>	Sigaretus striatus <i>Lea</i> sp.
56 Natica decipiens <i>Mr.</i>	Natica parva <i>Lea.</i>	Natica parva <i>Lea.</i>
57 [Natica (semilunata <i>Lea</i> ?)]	Natica semilunata <i>Lea</i>	Natica semilunata <i>Lea.</i>
58 [Natica Vicksburgensis <i>C.</i> ]	Natica permunda <i>C.</i>	
59 Eulima sp.	Eulima sp. >	Eulima sp.
60	Rostellaria Lamarcki <i>Lea (R.</i> <i>staminea C.) &gt;</i>	Rostellaria Lamarcki <i>Lea.</i>
61 Distortrix crassidens <i>C.</i>	[Distortrix Jacksonensis <i>Mr.</i> ]	
62	Pseudoliva pyruloides <i>Lea</i> sp. var. <i>perspectiva C. (P. per-</i> <i>spectiva C.) &gt;</i>	Pseudoliva pyruloides <i>Lea</i> sp.
63 Buccinum Mississippiensis <i>C. &gt;</i>	Buccinum Mississippiensis <i>C.</i>	
64 [Fusus altilis <i>C.</i> ]	Fusus sp.	[Fusus spiniger <i>C.</i> ]
65 Fusus Böttgeri <i>Mr. &lt;</i>	Fusus Böttgeri <i>Mr.</i>	
66	Clavella humerosa <i>C.</i>	Clavella raphanoides <i>C.</i>
67 Turbinella perexilis <i>C.</i>	[Turbinella perexilis <i>C. ?]</i>	
68 Turbinella protracta <i>C.</i>	Turbinella humilior <i>Mr.</i>	
69 Fulgur Mississippiensis <i>C. sp.</i>	Fulgur filius <i>Mr.</i>	
70	Voluta (Scapha) Parkinsoni <i>Lea (Caricella polita C.)</i>	Voluta (Scapha) Parkinsoni <i>Lea.</i>
71	Marginella semen <i>Lea.</i>	Marginella semen <i>Lea.</i>
72	Marginella incurva <i>Lea ?</i> var. <i>Jacksonensis Mr.</i>	Marginella incurva <i>Lea ?</i>
73 Mitra conquisita <i>C.</i>	Mitra conquisita <i>C. (M. Mel-</i> <i>lingtoni C.)</i>	
74	Mitra pactilis <i>C.</i> var. <i>dumosa</i> <i>C. (M. dumosa C.) &gt;</i>	Mitra pactilis <i>C.</i>
75 Oliva Mississippiensis <i>C.</i>	Oliva media <i>Mr.</i>	Oliva gracilis <i>Lea ?</i>
76 [Cancellaria (funerata <i>C. ?)</i> ]	Cancellaria sp.	
77 Terebra divisura <i>C.</i>	Terebra divisura <i>C.</i>	> Terebra divisura <i>C.</i>
78 Pleurotoma tenella <i>C.</i>	Pleurotoma exsculpta <i>Mr.</i>	
79 Conus sauridens <i>C. (C. alvea-</i> <i>tus C.)</i>	Conus sauridens <i>C. (C. tortilis</i> <i>C.)</i>	> Conus sauridens <i>C.</i>
80 [Conus protracta <i>Mr.</i> ]	Conus Jacksonensis <i>Mr.</i>	
81	Actæon annectens <i>Mr.</i>	Actæon punctatus <i>Lea.</i>
82	Actæon lineatus <i>Lea.</i>	Actæon lineatus <i>Lea.</i>
83	Cylichna Dekayi <i>Lea (var. ?)</i>	Cylichna Dekayi <i>Lea.</i>
84	Cylichna confr. radius <i>Desh.</i>	Cylichna confr. radius <i>Desh.</i>

ART. LX.—*On Meteoric Iron from Trinity County, California;*  
by CHARLES UPHAM SHEPARD.

FOR my knowledge of the meteorite here described I am indebted to Col. Joseph Willcox, of Philadelphia, who incidentally mentioned to me last autumn that he had seen some years ago a metallic mass at Holmes' Hole, Mass., brought from California, that he suspected to be of meteoric origin. It was in the possession of Captain C. W. Davis, who procured it ten years ago at Canyon City, in Trinity County. Through the kindness of Mr. A. F. Crowell of Wood's Holl, a few grams were obtained from Captain Davis for examination and analysis; the result of which has been that the meteoric origin, at first regarded as doubtful, has been established.

The first portions that were detached had the appearance of pure limonite; but were afterwards proven to contain minute particles of nickeliferous iron, whereby small fragments were readily attracted by the magnet. The thickness of the crust affording this limonite must have been at least a tenth of an inch; whence it may be inferred, that the meteorite had originated in a very ancient fall. The specific gravity of the limonite was between 3.81 and 4.04. It was compact, but yielded to pulverization, with exception of occasional very fine metallic grains, that flattened slightly by extreme pressure under the pestle. The application of the magnet took up more than half of this powder, which principally consisted of the limonite. It was thus found to be impossible to separate it from the metallic portion. An approximate separation of the two substances, however, was effected by HCl in the cold; and though the combination of them was not uniform, the nickel-iron was determined in one instance to be at least 10 per cent.

Two small fragments of the nearly unaltered interior were supplied for analysis. In these the coarsely grained crystallization was apparent, affording cleavable crystals of the octahedral form, similar to what is found in the Putnam Iron, that of Cocke County and others. The specific gravity of these fragments was 7.1, which is less than the average of meteoric irons, a circumstance to be expected from slight adhesions of hydrated peroxide of iron. To the same reason also is ascribable the considerable loss in the subjoined analysis:

Iron .....	88.810
Nickel .....	7.278
Cobalt .....	0.172
Phosphorus.....	0.120 = 96.380

For want of material no search was made for tin, copper, or manganese. No sulphur was present in the portions examined. The weight of the mass is nineteen pounds. Its shape is oval, somewhat flattened, with numerous elongated depressions.