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COAL OF SOUTH WALES AND PENNSYLVANIA. 199

*Tabular view of the Analyses of nine samples of Anthracite from the mines of Lykens' Valley.*

No. of the sample.	Specific gravity.	Water expelled at 320°.	Volatile matter lost at redness.	Fixed Carbon.	Earthy residue.	Exterior and other characters of coal.	Character of ashes.
1	1.391	1.460	6.140	87.950	4.450	Deep black—fracture irregular, shining—or dull from intermixture of charcoal—of which the structure is distinctly seen—and which is soft—sectile and easily combustible—gives out gas, but does not change form on being ignited.	Color deep brown—inclining to reddish brown—light—little coherent, moderately gritty.
2	1.404	1.390	4.56	89.3	4.750	Brownish black—iridescent or steel blue—surface shining and striated—woody structure of the mineral charcoal seen as above—gas burns brightly.	Light fawn colour, moderately gritty—light—slightly coherent.
3	1.416	0.70	9.30	85.700	4.300	Lustre silky on a carbonaceous ground—mixture of mineral charcoal in certain parts, with a coke-like mass.	Brownish buff—slightly coherent.
4	1.374	1.10	3.50	88.700	6.700	Very similar to the preceding.	Brownish—dirty red, with slight tinge of purple—very slightly coherent—incineration probably not quite complete.
5	1.376	0.88	7.47	87.750	3.900	Color deep black—fracture uneven with appearances of coke or charcoal.	Yellowish red—inclining to brown—dense—coherent.
6	1.395	0.90	7.40	88.650	3.050	This sample is less marked with carbonaceous deposits than the preceding—a purplish red tint marks some of the partings, or cross cleats.	Colour deep, fawn, gritty—heavy, coherent.
7	1.382	0.90	7.75	87.200	4.150	Color deep black—surface shining, striated, silky and occasionally of a dull charcoal lustre—fracture uneven, original grain apparently obliterated by pressure.	Bright fawn—with slight tinge of rose colour, gritty, coherent.
8	1.398	1.314	10.54	83.996	4.150	Appears to resemble certain varieties of bituminous coal in structure, fracture and lustre, with slight specks of pyrites.	Bright buff colour, tolerably coherent—slightly gritty.
9	1.378	1.360	5.94	87.000	5.700	Dull black—surface shining at the fractures which cross the grain of the coal—horizontal seams conspicuous, fine carbonaceous dust seen in the interstices.	Incineration not quite perfect, minute particles of coal perceptible—colour deep fawn.
mean	1.390	1.111	6.955	87.360	.52		

From: Journal Acad. Nat. Sci. Phila  
VIII (1842)

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*Description of Five new species of American Freshwater Shells.* By S. S. HALDEMAN.

Read September 7, 1841, and January 18, 1842.

GENUS AMNICOLA.

*AMNICOLA attenuata*.—Shell very long and slender, with six obliquely revolving, very convex turns, separated by a deep suture; aperture small, ovate, with the peritreme level and continuous, as in *Cyclostoma*. Length one-third of an inch.

*Hab.* A spring in Montgomery county, Virginia, connected with Roanoke river.

*Observations*.—Very like, but more slender than *CYCLOSTOMA lapidaria*, Say; which I refer to this genus, as well as *C. Cincinnatiensis*, Lea; retaining for this species Mr. Anthony's specific name, Sayana, under which appellation the shells were distributed by this gentleman. This substitution is necessary, because the previously described *PALUDINA Cincinnatiensis* is an *Amnicola*. *MELANIA integra*, Say, is an *Amnicola* also.

GENUS PHYSA.

*PHYSA globosa*.—Shell globose, translucent; spire very short and rounded; aperture very wide, occupying considerably more than half the entire area of the shell; fold well marked, whirls three. Length one-fifth of an inch.

*Hab.* Mouth of Nolachucky river, attached to submerged rocks, in the rapids.

*Observations.*—This species is a valuable acquisition to Malacology, as it enables us to place the genus *Ancylus* among the Limneans, where it has hitherto held but a doubtful place. Any one who has examined the animal of *Ancylus*, cannot have failed to observe its similarity to *Planorbis*; and some authors assert that it ascends to the surface of the water to breathe *air*. This I doubted, because the species with which I am familiar, inhabit the interior of bivalve shells, or the surface of stones in rapid water; whence it is impossible for them to rise to the surface, and regain their previous position. I hence infer that they breathe *water*, as well as the *Physa* above described, inhabiting, as it does, the middle of a river, in rapids nearly two feet deep at low water, and without objects rising above the surface. It is highly probable that air-breathing *Ancylis* exist; and it is even possible that the same organ may be adapted to the respiration of both air and water.

#### GENUS UNIO.

*UNIO puniceus.*—Shell ovate elliptical, regularly inflated, rather thick in texture; short and obtuse anteriorly; slightly narrowed, and obtusely rounded posteriorly; umbones eroded, and not elevated above the dorsal outline: umbonial slope undefined, posterior slope elevated: anterior teeth thick and direct, posterior ones short and straight: epidermis smooth, yellowish brown, with well-defined dark



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green rays upon the posterior portion of the shell : inside light reddish orange. Length 2.2, height 1.2, diameter 0.8 inch.

*Hab.* Holston river, Washington county, Virginia.

Distinguished from *U. tenebrosus*, by having more robust and direct teeth; and from *U. Muhlfeldianus*, by being higher and more obtusely rounded in front, and less so posteriorly.

*UNIO abacus*.—General form of *U. subplanus*, Conrad. Substance of the shell thick, umbones approximate, depressed, anterior, and without internal cavity : posterior slope regularly arched : muscular and palleal impressions very well marked : epidermis brown, rough. Length 3.8, height 2.0, thickness 1.0 inch.

*Hab.* Holston river, Tennessee.

GENUS ANODON.

*ANODON plicatus*.—Shell oblong ovate, highest posteriorly, posterior extremity obtusely rounded, and equally so above and below : valves thin, with conspicuous lines of growth : umbones prominent, with strong undulations. Brownish green, obscurely rayed with the latter color. Length 1.8, height 1.0, thickness 0.6 inch.

*Hab.* Cumberland river, Tennessee.

Differs from *A. incerta* by having more elevated beaks, a darker color, and the posterior extremity more obtuse.