Findings on and Proposals for the Categorization, Display, and Morphology of the

Occlupanid

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Abstract

It is the belief of the H.C.C.F.O. that the categorization of individual occlupanids based on their unique features could be improved within the study of occlupanology. This article aims to better clarify, structure, and define a more specific method of organization for individual occlupanids, as well as expand upon certain aspects of morphology, building on the previous research of the Holotypic Occlupanid Research Group, Dry Water Occlupanid Research Center, and Foundation for Occlupanology Research and Communication.

Keywords: occlupanid, occlupanology, morphology

Proposed Standard for Orientation

We propose that the standard orientation for display, such as in binders, on pinboards, etc. should be with the oral groove opening downward and the palps in line with the chirality of the individual occlupanid. Our findings suggest this to be the most natural and comfortable orientation of the occlupanid based on our observation of wild specimens. All references to directions like left, right, up, or down, should be made with the natural orientation and chirality in mind to avoid confusion during documentation and maintain accuracy.

Proposed Standard for Additional Nomenclature

We propose additional names for the individual occlupanid for ease of documentation and organization. Following the typical genus and species names, we suggest the inclusion of the chromatic name, chiral name, and affectal name, in that order. These additional names give occlupanologists more opportunities to distinguish their specimens from one another, as well as describe the entire appearance of an occlupanid with a single, though long, name.

Surfaces

An occlupanid has two surfaces, which are the wide, flat planes that take up most of its body's surface area. The surfaces are named for the direction the greater distal palp faces when that surface is facing outward. The greater distal palp faces right when the *dexter* surface is visible, and left when the *sinister* surface is visible. A palpless occlupanid has no directional distinction of its surfaces.

Chirality

The Dry Water Occlupanid Research Center found that palp-bearing occlupanids display a natural "handedness" determined by the surface on which they bear markings, or *vestigium*. We suggest that "handedness" is instead referred to as chirality, and expand upon the D.W.O.R.C.'s categorization of it. The chiral name should be the name of the "dominant surface," or the surface vestigia appear most prominently on. By default, an *inanis*, or marking-less palp-bearing occlupanid should be displayed dexter and requires no chiral name.

If a palp-bearing occlupanid has markings on both sides, the surface with larger or more numerous markings should be considered dominant. In this situation, an additional chiral name, *bifaciatus,* should be added following the typical *dexter* or *sinister*.

Figure 1

Illustration of Chirality in Palp-Bearing Occlupanids



Palpless occlupanids should be referred to only by the presence, or lack of, vestigia. A palpless occlupanid without any marking should have the chiral name *inanis*, while one with markings should have the chiral name *vestigium*.

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Figure 2

Illustration of Vestigia on Palpless Occlupanids



Affectal Names

An affectal name is only required when an occlupanid has an *affectum*, or attachment that is a different material than the occlupanid. The affectal name should go after the chiral name.

Any occlupanid with an attached "sticker" or *macula* of material different from its makeup that does not extend off of the cephalothorax should have the affectal name *macula*. If the macula is removed or falls off, the secondary affectal name should be *sans macula*.

Any occlupanid with an attached "tail," or *amiculum*, of a material different from its makeup that extends off of the cephalothorax should have the affectal name *amiculum*. If the amiculum is removed or falls off, the affectal name should be *sans amiculum*.

Figure 3

Illustration of Affecta



Proposed Morphological Terms

While most occlupanid morphology is agreed upon by most occlupanologists, we propose a few new or lesser-known names for certain parts of the occlupanid.

• CEPHALOTHORAX: It is our belief that the occlupanid entirely consists of a cephalothorax, or a fused head and thorax. While distinction can and should be made between the head and thorax, recognizing the occlupanid as having a cephalothorax is helpful in understanding occlupanid bodily structure. The head and thorax are divided

horizontally at the point of the apex of the oral groove by drawing a horizontal line through the apex called the line of division.

Figure 4

Illustration of the Distinction Between Head and Thorax by the Line of Division



• COXA: The "corners" of a palpless occlupanid. Coxae on the posterior edge of an occlupanid are referred to as distal coxae, while those on the head are referred to as proximal coxae.

Figure 5

Illustration of the Distal and Proximal Coxae



- HEAD: The head of an occlupanid begins at the apex of the oral groove and consists of the oral groove and its contents (dental processes, oral furrows, etc.), the mesial jaw, and the lateral jaw. Can be distinguished from the thorax by running a horizontal line through the apex of the oral groove (See fig. 4).
- JAW: An already accepted term that requires further definition. An occlupanid has two jaws: the mesial (right) jaw and the lateral (left) jaw, each typically ending in an oral hook. A jaw begins as the head does at the apex of the oral groove and takes up the majority of the head. The jaws can be distinguished from one other by running a vertical line through the apex of the oral groove called the line of oral symmetry.

Figure 6

Illustration of the Mesial and Lateral Jaws with Lines of Oral Symmetry and Division



• ORAL FURROW: The exaggerated dips found between the oral hooks and/or dental processes. While currently only used for some families, we propose the use in all families to which it applies. In the case of multiple furrows, as seen in Tridentidae and other

families, the furrows are numbered in symmetrical pairs based on proximity to the paraoral adit (see fig. 7).

- PALPAL FURROW: The dips that often offset palps. These have the same naming convention as their respective palp, meaning the furrow of the greater proximal palp will be referred to as the greater proximal furrow, etc (see fig. 7).
- THORAX: An alternative name to the posterior edge of the occlupanid being referred to as the "body," in comparison to the jaws, which may give the false idea that the jaws are separate from the body when they are in fact fused to it (See fig. 4).

Figure 7

Illustration of the Proposed Anatomy of the Palp-Bearing Occlupanid



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Conclusion

We believe that the addition of these new concepts, terms, and distinctions will aid the function of the occlupanology community in both scientific and hobby circles. The addition of further nomenclature will allow occlupanologists to further describe their occlupanid specimens during documentation, making it easier to easily tell the features of an occlupanid upon seeing its name. The addition of new morphological terms will make it easier for researchers to describe specific features of an occlupanid, and allows all occlupanologists to further their understanding of occlupanid morphology.

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