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## COLLOQUIUM ON TERMINOLOGY

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A colloquium was held to attempt to standardize some of the terminology used to describe cnidae and cnidocytes, and to agree on a terminology that would be simple, precise, and that would not conflict with terminology in other areas of biology. Criteria used to judge specific terms were clarity, general applicability to all cnidae and cnidocytes, ease of understanding and usefulness for biologists specializing in other areas, and historical precedence. The terms and definitions below represent the views of the majority of those participating in the colloquium.

1. cnida (cnidae) - the intracellular secretory product diagnostic of all members of the phylum Cnidaria. It consists of a capsule containing a highly-folded, eversible tubule. Cnidae are used to capture prey, to defend against predators, to attack (or to defend against attack by) unrelated, neighboring cnidarians, and to attach to suitable substrates. Nematocysts, spirocysts and ptychocysts are the three major categories of cnida. In the special case of the ptychocyst, discharged cnidae

- provide the structural framework for protective layers around the body column of certain burrowing anemones.
2. cnidocyte - the cell that synthesizes the cnida, and from which the cnida discharges. The immature cnidocyte is referred to as a cnidoblast. The stage of development at which a cnidoblast becomes a cnidocyte was not agreed upon. The alternate views were, (1) once the cell reaches its definitive location in the epithelium and the cnida is positioned with the capsule apex oriented outward and, (2) once the cell begins to migrate from its site of origin to its definitive location in the animal. If the type of cnida is known, the more specific term, nematocyte (nematoblast), spirocyte (spiroblast) or, ptychocyte (ptychoblast) should be used.
  3. tubule - the portion of the cnida that everts during discharge. The tubule is a cylindrical structure that is continuous with, or attached to, the apex of the capsule. Basally enlarged regions of the tubule are called shafts rather than butts. No separate term was agreed upon to describe the distal region of the tubule. The tubule can exist in several different states. Prior to discharge, the inverted tubule is located within the capsule. During discharge, the tubule is everting and after discharge, the tubule is everted. During the development of the cnida, the tubule is synthesized in the cytoplasm outside the capsule. Because all tubules now are thought to invert into the capsule after synthesis, tubules in the cytoplasm are referred to as preinverted tubules or, when appropriate, as inverting tubules. Because all cnida tubules are hollow and evert during discharge, such terms as thread and filament were considered to be inaccurate and inappropriate. The term, external tube, used to describe tubules in the cytoplasm of cells synthesizing cnidae, was considered to be confusing because it does not clearly indicate that the tube is external to the capsule but is not external to the cell.
  4. spine - the armature decorating the surface of an everted tubule of a nematocyst. The shape of spines varies from one type of nematocyst to another. Generally speaking, spines are barb-shaped, although they may be shaped as spades (in many mastigophores) or even as anvils (in certain holotrichs). The term, spine is intended to be the general term, while other terms that more adequately describe the shape of a particular spine are encouraged. For example, the initial penetrating spines of the stenotele of hydra are accurately described by the term stylet. The spines of nematocysts of Physalia are barb-shaped, and the term barb may be used to describe them.

The term, barb also may be used to describe small, secondary extensions of a particular spine.

5. cnida membrane - the limiting membrane that lies outside of the cnida capsule, and which separates the outer wall of the capsule from the cytoplasm of the cnidocyte.
6. wall of the capsule - in nematocysts, walls are composed of two or more layers that can be distinguished in the electron microscope. The outer layer of the capsule wall is in contact with the cnida membrane; the inner layer is in contact with the contents of the capsule. Any additional layers that may be distinguishable within capsule walls of certain cnidae are designated as intermediate layers. Such terms as inner layer and outer layer are preferable to the terms sclera and propria because the former are descriptive and less confusing.
7. wall of the tubule - walls exist in as many as five configurations: preinverted, inverting, inverted, everting and everted (see "tubule" above). Thus, authors are encouraged to provide complete descriptions of tubule walls such as, "outer layer of the wall of the preinverted tubule", etc. in order to avoid confusion.
8. matrix contents - the material within the capsule lumen or within the lumen of the inverted tubule that is of an undefined chemical composition (such as that visible in a thin-section of a cnida viewed in the electron microscope). The term soluble contents refers to the material obtained from cnidae that is intended for chemical analysis. The soluble contents may or may not be equivalent to the venom, depending on the procedures used to obtain the soluble contents.
9. venom - *the contents of a nematocyst that are injected* into a target following discharge. The venom can include toxins, materials having a known negative influence on biological systems, and other materials such as salts, inert fluids, and remnants of nematocyst assembly, etc.

#### Further recommendations:

For terms not considered in the colloquium, the participants recommended that descriptive terms be used until definite functions of structures are known. They also suggested that any term coined by an author during the preparation of a manuscript be checked against published material for possible conflict or ambiguity.