

ANATOMICAL TERMS OF REFERENCE

The terms used in denoting position and direction of parts are either adjectives or adverbs. They are derived from nouns, the names of the surfaces or aspects.

Nouns - The following names are applied to the surfaces: dorsum, venter, dextron, sinistron, latus, cephalon, cauda, meson, proximus, distus, ecton, and enton.

Adjectives - The adjectives, except cephalic, end in -al and are dorsal, ventral, dextral, sinistral, lateral, cephalic, caudal, mesal, proximal, distal, ectal, and ental.

Adverbs - The adjectives are transformed into adverbs by substituting for their ending -al, the termination -ad, which is equivalent to the English suffix, -ward. The adverbs are dorsad, ventrad, dextrad, sinistrad, laterad, cephalad, mesad, proximad, distad, ectad, and entad.

Aspects of the Body. A cube or the body of an insect has six surfaces. Each of these surfaces under the nomenclature used here is known as an aspect.

Dorsum - The back of an insect is known as the dorsum and includes all parts of the back.

Venter - The underside of the body, the surface or aspect opposite to the dorsum, is known as the venter and includes all parts of the under surface.

Latus - The surfaces connecting the dorsum and venter on each side, the dextron and sinistron, are identical in form. Each of these surfaces is known as a latus. Dextron and sinistron and the adverbs and adjectives derived from them are rarely used.

Cephalon - The vertical surface at the head end of the body is known as the cephalon.

Cauda - The vertical surface at the opposite or tail end of the body is known as the cauda.

Meson - The term meson is applied to the imaginary plane which divides bilaterally symmetrical animals into two similar right and left halves. The dorsal portion of this plane is known as the dorso-meson and the ventral as the ventro-meson.

Cardinal Direction. The terms used in designating the six aspects of the body are applied to the six cardinal directions. None of the following terms are limited to any particular part of the body. They are relative.

Cephalic - This is a longitudinal line drawn from any part of the body to or beyond the head.

Caudal - This is a longitudinal line drawn from any part of the body to or beyond the tail. It is the opposite of the cephalic direction.

Lateral - This is a double direction, a longitudinal line either to the right or to the left from any part of the body away from the meson. It is equivalent to the dextral direction or the sinistral direction depending which direction the line is drawn.

Mesal - This direction is the opposite of lateral and is a longitudinal line drawn from any part of the body back to and perpendicular with the meson.

Dorsal - This is a vertical line drawn from any part of the body to or beyond the back.

Ventral - This is a vertical line drawn from any part of the body to or beyond the venter. This is opposite of dorsal.

Oblique Directions. An oblique direction is indicated by a line drawn between two points through two or three different aspects and named from the aspects through which it passes. Such directions, therefore, are indicated by a compound or hyphenated term, the termination of the word preceding the hyphen being replaced by the vowel o. The order of the parts in the hyphenated word is immaterial. Example: dorso-cephalic. Compound terms may be used in a similar manner to designate aspects between the primary aspects. Example: dorso-lateral aspect.

Aspects of Appendages. The wings are considered as if extended in a horizontal position at right angles to the meson. The legs are regarded as if extended horizontally at right angles to the meson, the knee joint being held dorsad and bottom of the foot, the part applied to the ground in walking, being held ventrad. The appendages have four aspects: dorsal, ventral, cephalic, and caudal, if the two ends are disregarded.

Proximal and Distal - These terms apply only to the appendages of the body, and in combination with those described in the preceding paragraphs cover all the aspects of an appendage. Proximal indicates nearness to the end of the portion that is attached to the body. Distal indicates nearness to the free or unattached end of an appendage.

Ectal and Ental - These terms should be used only in describing and comparing the inner and outer parts of the body. Ectal indicates nearness to the external surface of the body. Ental indicates remoteness from the external surface of the body and is properly applied only when used in reference to structures within the outer covering of the body or cuticle.

Numbering Segments. The appendages are usually composed of a series of segments. These are numbered, first, second, third, etc. The proximal segment is always the first segment. When it is necessary to refer to any of the segments between the proximal and the distal, they are designated as the intermediate segments. The segments of the abdomen are numbered beginning at the cephalic end.