



Text fig. 10. The position of Levels illustrated in the Atlas; based on Figure 9.

IV. Atlas of the Rat Brain

A discussion of how to use this Atlas, along with details about how it was produced, may be found in Section II. It may be useful, however, to summarize the following points here.

In general, cell groups are outlined with dashed lines, whereas fiber tracts are indicated by solid lines; in addition, gray matter is generally indicated by shades of gray, whereas areas of white matter are generally shown in white.

As far as labeling is concerned, major cell groups are abbreviated with upper case letters (for example, *AHN* refers to the anterior hypothalamic nucleus), subdivisions of cell groups are indicated by lower case letters following the main abbreviation (for example, *AHNa* refers to the anterior part of the anterior hypothalamic nucleus), and fiber tracts are indicated by lower case letters alone (for example, *ac* refers to the anterior commissure). Many times when the subdivisions of a cell group are small, only the lower case abbreviations for some of the subdivisions are used (for example, see the paraventricular nucleus of the hypothalamus, PVH, in

Level 25); care has been taken to avoid possible confusion with fiber tracts when this has been done. It should also be obvious that all of the layers for each cortical area have not been indicated, since the basic lamination pattern often extends across adjacent areas. And finally, it is worth re-emphasizing that the boundaries indicated for cell groups and fiber tracts are often crude approximations; reasons for this may be appreciated by studying the primary literature referred to in Section V, and by examining normal and experimental histological preparations directly. Fuzzy borders are the rule rather than the exception in the nervous system. In addition, it should be re-emphasized that many of the boundaries indicated in the drawings cannot be seen in the photomicrographs—they were determined microscopically. Low-power photomicrographs have relatively low resolution compared to the tissue section itself.

The rostrocaudal distribution of frontal sections used for the Atlas is shown in text fig. 10, where the thickness of the sections is shown to scale. Two coordinate systems are indicated for each level of the Atlas. One shows the physical coordinates of the brain as measured in millimeters in the histological sections themselves (after embedment, sectioning, staining, mounting, and covering). These are the coordinates indicated by the grid underlying each drawing. As shown in text fig. 9, zero in the rostrocaudal dimension was placed at the rostral tip of the olfactory bulb. It is also important to note that the brain is oriented as though resting on a flat surface, which corresponds to zero in the dorsoventral axis (see levels 30 and 60); zero in the mediolateral dimension corresponds to the midline. The other system approximates the stereotaxic coordinates presented in Paxinos and Watson (1986). The rostrocaudal coordinates for this system (which are based on mm from the intersection of the sagittal and coronal sutures, bregma, β) are given in parentheses after the value for the rostrocaudal physical coordinate; for example, these values for level 1 are 1.80 (+8.24) mm. The dorsoventral coordinate for this system must be obtained by using the grid in Appendix B. For this, place the horizontal

(dorsoventral) zero line of the overlay on the short line protruding from the left hand border of the physical coordinate grid (in level 1 it lies just above 6 mm dorsal to zero).

A number of the more common synonyms for structures labeled in the Atlas may be found in the Index.