

Contents

Translator's note: Brodmann's Contents list is a curious mixture of accurate references to titles of actual chapters and sections in the text, altered section titles, and short descriptions of section contents. I have tried to retain some of the inconsistency, while attempting to make the Contents useful to the modern reader. For this reason, I have incorporated in it the new sections that I have added: Translator's Introduction, References and Notes, and Glossary of Species Names.

Frontispiece	I
Original Title Page	II
Contents	V
Translator's Introduction	IX
Foreword	1
Introduction	3
The aims and methods of histological cortical localisation Cytoarchitectonics, myeloarchitectonics, fibrilloarchitectonics, elemental localisation, stratigraphic parcellation, topographic structure.	

Part I. The principles of comparative cortical cytoarchitectonics11

Chapter I. The basic laminar pattern of the cerebral cortex. <i>Homogenetic</i> and <i>heterogenetic</i> cortical formations.	13
a) The developmental basis for the six-layered cortex.....	18
b) The comparative anatomical basis for the six-layered cortex.....	30
Chapter II. Regional variations in cell structure of the cerebral cortex	37
1. The general rules of variability	37
I. Variations in established six-layered cortex (<i>homotypical formations</i>) through:	38
a) changes in cell density	
b) changes in cell size or specific cell type	
c) changes in relative thickness of layers	
d) increase or decrease of the whole cortical thickness	
II. Extreme variations with an altered number of layers (<i>heterotypical formations</i>)	
1. Increase in the number of layers.....	38
a) through splitting of a basic layer into two or more sublayers	
b) through the appearance of new cell types within a basic layer	
2. Reduction in the number of layers.....	42
a) through the disappearance of an originally present layer	
b) through the fusing of basic layers	
2. Regional characteristics of individual layers (Constancy and variability).....	46
a) The most constant layers: I and VI.....	46
b) The most inconstant layers: II and IV.....	50
c) Intermediate variability: layers III and V	54
Chapter III. Particularities of the cytoarchitecture in different animals.....	59
1. General particularities of cortical architectonics in different animals.....	60
a) Cortical thickness	61
b) Cell size	63
c) Cell number.....	72
2. Modifications of individual basic layers in mammals	78
3. Specific differentiation of individual homologous cortices in different animals <i>Monomorphic and polymorphic homology</i>	87

Part II. The principles of comparative field organisation in the cerebral cortex.

(Topographical maps).....99

Chapter IV. Description of individual brain maps	105
I. The human brain map.....	106
II. Lower monkeys (guenon and marmoset)	126
III. The prosimians (lemurs)	140
IV. Pteropus (flying fox).....	153
V. The kinkajou (<i>Cercoleptes caudivolvulus</i>).....	157
VI. Rodents (rabbit and ground squirrel).....	162
VII. The hedgehog (<i>Erinaceus europaeus</i>)	166

Chapter V. Common features in cortical cytoarchitectonics.....	171
1. Similarity of position	171
2. Constancy of regions	172
3. Persistence of individual areas.....	178
Chapter VI. Variations in cortical architectonics	181
1. Non-essential variations (Variation in the size, position and form of individual areas). Examples:	182
a) giant pyramidal area (area 4).....	182
b) striate area (area 17)	185
c) entorhinal area (area 28).....	193
2. Essential variations	195
a) Hypertrophy or progressive differentiation.....	
b) Involution or regressive differentiation of areas and zones	
Part III. Synthesis: Hypothesis of the cortex as a morphological, physiological and pathological organ	209
Chapter VII. Histological cortical localisation in relation to morphology	205
1. The basic principles of localisation	205
a) The principle of regional differentiation.....	205
b) The principle of similar differentiation (homology of cortical divisions)..	206
1. Homogenetic cortex	207
α) Homotypical formations	
β) Heterotypical formations	
2. Heterogenetic cortex	207
α) primitive cortex	
β) rudimentary cortex	
γ) striate cortex	
c) The principle of divergent development of homologous elements (Polymorphism of cortical types)	211
d) Special homologies	214
α) Complete homology	214
β) Incomplete homology (Defective, augmentative, imitative homology)	214
2. The question of the "organ"	215
a) Organ formation by differentiation	215
b) Refinement through differentiation	216
c) Different degrees of development.....	217
α) Primary phylogenetic and secondary ontogenetic differentiation	217
β) Correlation of parts.....	218
γ) Progression, regression and lack of change	
δ) Monotropic and polytropic types	219
3. The systematic significance of our results	219
a) Phylogenetic relations in general.....	219
b) The position of man	220
α) Huxley's pithecometric thesis	220
β) Anthropological aspects	

Chapter VIII. Localisation and histopathology	225
1. Elemental pathology.....	226
2. Architectonic pathology.....	228
3. Tectogenetic pathology.....	231
a) Idiocy	231
b) Hereditary and familial diseases.....	
4. Regional pathology.....	235
Chapter IX. Physiology of the cortex as an organ	239
1. Localisation by elements.....	240
a) Previous interpretations	240
b) The histological facts and their consequences	241
c) Newer hypotheses.....	243
2. Regional functional localisation in general.....	245
a) Historical retrospect	245
1. Antilocalisation period.....	
2. Half localisers	
3. Strict localisers	
b) The principle of functional localisation from the morphological point of view	248
1. Total or collective functions.....	250
2. Localised functions	252
α) Absolute localisation	252
β) Relative localisation	253
a) Principle of multiple functional representation	253
b) Principle of functional replacement	253
3. Special functional localisation (Relationships between anatomical and physiological localisation).....	254
a) The motor cortex	254
b) The human visual cortex	257
c) The human auditory cortex	258
d) Speech and aphasia	259
e) Individual functional centres in animals.....	260
Literature	263
Translator's References	267
Glossary of Species Names	281
Translator's Notes	284
Index	295



<http://www.springer.com/978-0-387-26917-7>

Brodmann's

Localisation in the Cerebral Cortex

Brodmann, K.

2006, XVI, 298 p. 150 illus., Hardcover

ISBN: 978-0-387-26917-7