

Contents

Preface to the third edition	1
1 Land use	2
1.1 Land area and its productive capacity	2
1.2 Land-use constraints	3
1.3 Land use and soil conditions	4
1.4 Agricultural use of land	5
1.5 Non-agricultural use of land	6
1.6 Misuse of land	6
1.7 The task of the soil scientist	6
2 Soil science	7
2.1 History	7
2.2 Branches	8
2.3 Literature	9
2.4 Study of soils	10
2.5 Classification of soils	11
2.6 Soil survey, soil maps and reports	14
2.7 Soil Map of the World	15
2.8 General characteristics of groups of major soils	16
2.9 Subdivision	20
3 The major soils of the world	24
3.1 Histosols	24
3.2 Lithosols	24
3.3 Vertisols	25
3.4 Fluvisols	28
3.5 Solonchaks	30
3.6 Gleysols	33
3.7 Andosols	35
3.8 Arenosols	36
3.9 Regosols	36
3.10 Rankers	37

3.11 Rendzinas	37
3.12 Podzols	37
3.13 Ferralsols	37
3.14 Planosols	39
3.15 Solonetz	40
3.16 Greyzems	41
3.17 Chernozems	42
3.18 Kastanozems	42
3.19 Phaeozems	42
3.20 Podzoluisols	42
3.21 Xerosols	43
3.22 Yermosols	44
3.23 Nitosols	45
3.24 Acrisols	45
3.25 Luvisols	46
3.26 Cambisols	47
3.27 Some general remarks	48
3.28 Intergrades	49
3.29 Area of major soils	50
 4 Soil formation	 52
4.1 Factors	52
4.2 Soil horizons	53
4.3 Diagnostic horizons	54
4.4 Diagnostic soil properties	60
4.5 Soil moisture and temperature regimes	62
4.6 Other useful soil properties	64
 5 Soil conditions	 68
5.1 Landscape types	68
5.2 Soils of river valleys	68
5.3 Soils of deltas and coastal areas	69
5.4 Soils of uplands	72
5.5 Soils of highlands and mountains	73
5.6 Soils of deserts and semi-deserts	74
 6 The US Soil Taxonomy	 76
6.1 The system	76
6.2 Soil orders and suborders	80
6.3 Great groups	83

7	Agricultural productivity of soils	87
8	Soil erosion: destruction of land	93
9	Soil improvement	95
9.1	Fertilizers	95
9.2	Irrigation	97
9.3	Drainage	99
9.4	Management of soils	99
9.5	Soil conservation	100
9.6	Land reclamation	100
10	Land evaluation	102
11	Soil investigations in the tropics	104
	Glossary of older soil names	107
	Short description of the soil profiles	111
	Selected literature	117
	Index	120