Contents

THE HIP	1
Movements of the hip and their ranges	2
Movements of flexion of the hip	4
Movements of extension of the hip	6
Movements of abduction of the hip	8
Movements of adduction of the hip	10
Rotational movements of the hip	12
Movements of circumduction of the hip	14
Orientation of the femoral head and acetabulum	16
Relationships of the articular surfaces	18
The structure of the femur and pelvis	20
The Labrum Acetabulare and the Ligamentum Teres of the femoral head	22
The capsular ligament of the hip	24
The ligaments of the hip	26
Role of the ligaments in flexion and extension	28
Role of the ligaments in lateral and medial rotation	30
Role of the ligaments in adduction and abduction	32
The physiological actions of the Ligamentum Teres	34
Coaptation of the articular surfaces of the hip	36
The muscular and bony factors influencing the stability of the hip	38
The flexor muscles of the hip	40
The extensor muscles of the hip	42
The abductor muscles of the hip	44
The transverse stability of the pelvis	48
The adductor muscles of the hip	50
The lateral rotator muscles of the hip	54
Rotator muscles of the hip	56
Inversion of muscular action	58
Successive recruitment of the abductor muscles	62
THE KNEE	64
The axes of the knee	66
Medial and lateral displacements of the knee	68
Movements of flexion and extension	70
Axial rotation of the knee	72
The general structure of the lower limb and orientation of the articular surfaces	74
Articular surfaces involved in flevion and extension	76

	ar surfaces in relation to axial rotation of the femoral and tibial condyles	78 80
		82
	s determining the shape of the distal femur	84
	nents of the femoral condyles on the tibial plateau during flexion and extension	
	nents of the femoral condyles on the tibial plateau during axial rotation	86
	psule of the knee	88
	frapatellar fold, the plicae and the capacity of the joint	90
	enisci of the knee	92
	nents of the menisci during flexion and extension	94
	nents of the menisci during axial rotation; lesions of the menisci	96
	nents of the patella on the femur	98
	p-patellar relationships	100
	ents of the patella on the tibia	102
	llateral ligaments of the knee	104
	nsverse stability of the knee	106
	teroposterior stability of the knee	110
	riarticular defence system of the knee	112
	iciate ligaments of the knee	114
	ns of the capsule and the cruciate ligaments	116
	rection of the cruciate ligaments	118
	echanical role of the cruciate ligaments	120
	ational stability of the knee during extension	126
	ic tests of the knee: (medial rotation)	130
	ic tests for rupture of the anterior cruciate ligament	132
	ic tests of the knee: lateral rotation	134
	tensor muscles of the knee	136
	ysiological actions of the rectus femoris	138
	xor muscles of the knee	140
	ator muscles of the knee	142
	tomatic rotation of the knee	144
The dy	namic equilibrium of the knee	146
THEA	NKLE	148
	icular complex of the foot	150
	and extension	152
	icular surfaces of the ankle	154
	aments of the ankle	156
	teroposterior stability of the ankle and the factors limiting flexion and extension	158
	nsverse stability of the ankle	160
	iofibular joints	162
The ph	ysiological functions of the tibiofibular joint	164
THE F	ООТ	166
Them	ovements of longitudinal rotation and the transverse movements of the foot	168
	otalar (talocalcanean) joint: the articular surfaces	170
	btalar joint: the congruence and incongruence of the articular surfaces	172
	us: the unusual bone	174
	aments of the subtalar joint	176
	nsverse tarsal (midtarsal) joint and its ligaments	178
THE tra	noverse tarsar (iniutarsar) joint and its figaments	1,0

The movements of the subtalar joint	180
The movements of the subtalar and transverse tarsal joints	182
The movements of the transverse tarsal joint	184
The overall functions of the joints of the posterior tarsus	186
The heterokinetic universal joint of the posterior tarsus	188
The role of the ligaments during inversion and eversion	190
The cuneonavicular, intercur eiform and tarsometatarsal joints	192
Movements of the anterior tarsal and tarsometatarsal joints	194
Extension of the toes	196
The interosseous and the lumbrical muscles	198
The sole of the foot: the plantar muscles	200
The fibrous tunnels of the dorsal and plantar aspects of the foot	202
The flexor muscles of the ankle	204
The Triceps Surae	206
The other extensor muscles of the ankle	210
The abductor-pronator muscles: the peronei	212
The adductor-supinator muscles: the tibialis muscles	214
THE PLANTAR VAULT	216
General architecture of the plantar vault	218
The medial arch	220
The lateral arch	222
The anterior arch and the transverse curvature of the foot	224
The distribution of stresses and the static distortions of the plantar vault	226
The architectural equilibrium of the foot	228
Dynamic changes of the arches of the foot during walking	230
Dynamic changes related to the medial and lateral inclination of the leg on the foot	232
Adaptation of the plantar vault to the ground	234
Claw foot (Pes cavus)	236
Flat foot (Pes planus)	238
Imbalance of the anterior arch	240
D14.12	242
Bibliography	242