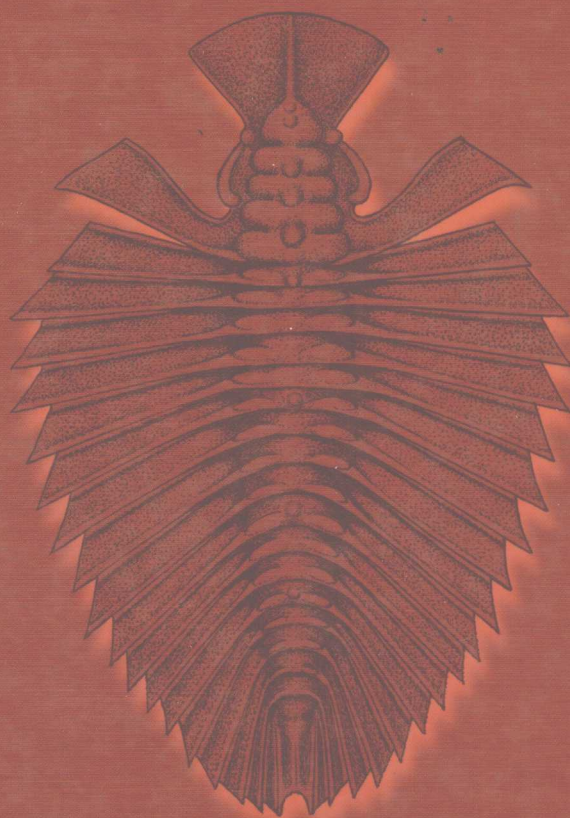


POLYMERID TRILOBITES FROM THE CAMBRIAN OF NORTHWESTERN HUNAN, CHINA

Volume 2 Ptychopariida, Eodiscida, and Undetermined Forms

PENG Shanchi
Loren E. BABCOCK
LIN Huanling



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PENG Shanchi, LOREN E. BABCOCK, and LIN HUANLING

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CONTENTS

INTRODUCTION.....	1
ACKNOWLEDGMENTS	1
REPOSITORIES.....	1
SYSTEMATIC PALEONTOLOGY	7
Order PTYCHOPARIIDA Swinnerton, 1915.....	7
Suborder PTYCHOPARIINA Richter, 1933.....	7
Superfamily PTYCHOPARIOIDAE Matthew, 1887.....	7
?Family PTYCHOPARIIDAE Matthew, 1887.....	7
Genus TOWNLEYELLA Öpik, 1967.....	7
<i>Townleyella rara</i> Yuan and Yin, 1998.....	7
Genus XILINGXIA Lu in Zhang <i>et al.</i> , 1980.....	8
<i>Xilingxia ichangensis</i> (Chang, 1964).....	9
Ptychopariid gen. et sp. indet.	10
Superfamily ASAPHISCOIDEA Raymond, 1924.....	11
Family ANOMOCARELLIDAE Hupé, 1953.....	11
Genus FISSANOMOCARELLA Peng, Lin, and Chen, 1995.....	11
<i>Fissanomocarella paibiensis</i> Peng, Lin, and Chen, 1995.....	11
Genus HUAYUANIA Peng, Lin, and Chen, 1995.....	11
<i>Huayuania subcalva</i> Peng, Lin, and Chen, 1995.....	12
<i>Huayuania quadrilateralis</i> (Resser and Endo, 1937).....	12
Genus PARANOMOCARELLA Yang in Zhou <i>et al.</i> , 1977.....	14
<i>Paranomocarella parallela</i> Yang in Zhou <i>et al.</i> , 1977.....	15
<i>Paranomocarella fortis</i> Peng, Lin, and Chen, 1995.....	17
<i>Paranomocarella similaris</i> sp. nov.	18
<i>Paranomocarella</i> sp.	19
<i>Paranomocarella? obvia</i> sp. nov.	19
Genus SZEASPIS Chang, 1959.....	20
<i>Szeaspis huananensis</i> sp. nov.	21
Family PROASAPHISCIDAE Chang, 1963.....	22
Genus PROASAPHISCUS Resser and Endo in Kobayashi, 1935.....	22
<i>Proasaphiscus? sp. cf. P. butes</i> (Walcott, 1905).....	23
Subgenus PROASAPHISCUS (HONANASPIS) Chang, 1959.....	23
<i>Proasaphiscus (Honanaspis)? sp. cf. P. (H.) parvus</i> Kuo in Lu <i>et al.</i> , 1965.....	24
Genus ADELOGONUS Öpik, 1967.....	25
<i>Adelogonus hunanensis</i> sp. nov.	26
<i>Adelogonus? sp.</i>	27
Genus EYMEKOPS Resser and Endo, 1937.....	28
<i>Eymekops? sp. 1</i>	28
<i>Eymekops? sp. 2</i>	29
Genus GRANDIOCULUS Cossmann, 1908.....	29

<i>Grandioculus obscurus</i> sp. nov.	31
<i>Grandioculus truncatus</i> sp. nov.	32
Genus HUAYUANASPIS gen. nov.	33
<i>Huayuanaspis granulosa</i> gen. et sp. nov.	34
<i>Huayuanaspis perpauca</i> gen. et sp. nov.	35
<i>Huayuanaspis?</i> sp.	36
Genus INIOTOMA Öpik, 1967	37
<i>Iniotoma laevis</i> sp. nov.	37
<i>Iniotoma porosus</i> sp. nov.	38
Genus MAOTUNIA Zhang and Jell, 1987	39
<i>Maotunia</i> sp. cf. <i>M. blackwelderi</i> (Resser and Endo, 1937)	39
<i>Maotunia</i> sp. cf. <i>M. semiplectra</i> Zhang and Jell, 1987	41
<i>Maotunia rectangularis</i> sp. nov.	41
<i>Maotunia</i> sp.	43
Genus SUDANOMOCARINA Jell in Jell and Robison, 1978	43
<i>Sudanomocarina traynorae</i> Zhang and Jell, 1987	44
<i>Sudanomocarina</i> sp. cf. <i>S. changi</i> Jell in Jell and Robison, 1978	44
<i>Sudanomocarina?</i> <i>huananensis</i> sp. nov.	45
<i>Sudanomocarina</i> sp.	47
Genus ZHUJIA Ju in Qiu et al., 1983	47
<i>Zhujia hunanensis</i> Peng, Lin, and Chen, 1995	48
Genus PAIBIELLA gen. nov.	48
<i>Paibiella paibiensis</i> gen. et sp. nov.	49
Genus PARAYUJINIA gen. nov.	50
<i>Parayujinia constricta</i> gen. et sp. nov.	50
Family CATILLICEPHALIDAE Raymond, 1938	52
Subfamily CATILLICEPHALINAE Raymond, 1938	52
Genus BUTTSIA Wilson, 1951	52
<i>Buttsia globosa</i> Lu and Lin in Peng, 1987	53
Genus MADAROCEPHALUS Resser, 1938a	55
<i>Madarocephalus orientalis</i> sp. nov.	56
Genus PARADISTAZERIS Zhu in Zhang et al., 1980a	57
<i>Paradistazeris hubeiensis</i> Zhu in Zhang et al., 1980a	58
<i>Paradistazeris hunanensis</i> (Peng, 1987)	58
<i>Paradistazeris rotundus</i> sp. nov.	59
<i>Paradistazeris</i> sp.	60
Subfamily ONCHONOTININAE Lu, 1965	61
Genus HUZHUIA Chu, 1965	62
<i>Huzhuia paratypica</i> Yang, 1978	63
<i>Huzhuia curvata</i> sp. nov.	64
<i>Huzhuia latilimbata</i> sp. nov.	65
Genus ONCHONOTELLUS Lermontova in Ivshin, 1956	66
<i>Onchonotellus curvitensus</i> sp. nov.	67
Genus PLACOSEMA Öpik, 1967	68
<i>Placosema bigranulosum</i> sp. nov.	68
Family CREPICEPHALIDAE Kobayashi, 1935	69
Genus CREPICEPHALINA Resser and Endo in Kobayashi, 1935	69
<i>Crepicephalina pergranosa</i> Resser and Endo, 1937	69
<i>Crepicephalina</i> sp. cf. <i>C. quadrata</i> Resser and Endo, 1937	70

<i>Crepicephalina</i> ? sp.	71
Genus METEORASPIS Resser, 1935.....	71
<i>Meteoraspis</i> sp. cf. <i>M. orientalis</i> Yuan and Yin, 1998.....	72
Family DICERATOCEPHALIDAE Lu, 1954.....	73
Genus FENGHUANGELLA Yang in Zhou et al., 1977.....	73
<i>Fenghuangella laochatianensis laochatianensis</i> Yang in Zhou et al., 1977.....	74
<i>Fenghuangella laochatianensis crassa</i> subsp. nov.....	76
<i>Fenghuangella coniforma</i> Yang in Zhou et al., 1977.....	77
<i>Fenghuangella liostracinala</i> Yang in Zhou et al., 1977.....	79
<i>Fenghuangella fusilis</i> sp. nov.	80
Family DOKIMOCEPHALIDAE Kobayashi, 1935.....	81
Subfamily CONOKEPHALININAE Hupé, 1955.....	81
Genus LOBOCEPHALINA Růžička, 1940.....	81
<i>Lobocephalina sinensis</i> sp. nov.	82
Family EULOMIDAE Kobayashi, 1955.....	83
Subfamily EULOMINAE Kobayashi, 1955.....	83
Genus STIGMATOA Öpik, 1963.....	83
<i>Stigmatoa yangziensis</i> Yang in Zhou et al., 1977.....	84
Family KINGSTONIIDAE Kobayashi, 1933b.....	85
Genus KINGSTONIA Walcott, 1924.....	85
<i>Kingstonia euryaxis</i> sp. nov.	85
Family LISANIIDAE Chang, 1963.....	87
Genus LISANIA Walcott, 1911.....	87
<i>Lisania paratungjenensis</i> Yang in Zhou et al., 1977.....	90
<i>Lisania yuanjiangensis</i> (Yang in Zhou et al., 1977).....	92
<i>Lisania</i> sp. cf. <i>L. agonius</i> (Walcott, 1905).....	94
<i>Lisania paibiensis</i> sp. nov.	95
<i>Lisania wangcunensis</i> sp. nov.....	97
<i>Lisania</i> ? sp.	97
Genus BAOJINGIA Yang in Zhou et al., 1977.....	98
<i>Baojingia youshuiensis</i> Yang in Zhou et al., 1977.....	99
<i>Baojingia jiudiantangensis</i> (Yang in Zhou et al., 1977).....	101
<i>Baojingia latilimbata</i> (Peng, 1987).....	102
<i>Baojingia paralala</i> (Yang in Zhou et al., 1977).....	103
<i>Baojingia quadrata</i> (Yang in Zhou et al., 1977).....	104
<i>Baojingia subquadrata</i> (Yang, 1978).....	106
<i>Baojingia tungjenensis</i> (Nan in Egorova et al., 1963).....	108
Genus NEOANOMOCARELLA Hsiang in Egorova et al., 1963.....	109
<i>Neoanomocarella asiatica</i> Hsiang in Egorova et al., 1963.....	110
<i>Neoanomocarella incilis</i> sp. nov.....	112
Genus QIANDONGASPIS Yuan and Yin, 1998.....	113
<i>Qiandongaspis sinensis</i> (Peng, 1987).....	114
<i>Qiandongaspis convexa</i> sp. nov.....	115
<i>Qiandongaspis xiangxiensis</i> sp. nov.....	116
<i>Qiandongaspis</i> sp.....	117
Genus SHENGIA Hsiang in Egorova et al., 1963.....	117
<i>Shengia quadrata</i> Hsiang in Egorova et al., 1963.....	118
<i>Shengia trapezia</i> Peng, 1992.....	119
<i>Shengia wannanensis</i> Qiu in Qiu et al., 1983.....	120

<i>Shengia</i> sp.	121
Family LONCHOCEPHALIDAE Hupé, 1953	121
Genus AETHIA Qian and Zhou, 1984	121
<i>Aethia rectangula</i> Qian and Zhou, 1984	122
Genus NEOGLAPHYRASPIIS Yuan and Yin, 1998	122
<i>Neoglaphyraspis nitida</i> Yuan and Yin, 1998	123
Genus PRODAMESELLA Chang, 1959	124
<i>Prodamesella punctata</i> Ergaliev, 1980	125
<i>Prodamesella</i> sp. cf. <i>P. biserrata</i> Jell in Jell and Robison, 1978	126
<i>Prodamesella tumidula</i> sp. nov.	127
Family MAPANIIDAE Chang, 1963	128
Genus MAPANIA Resser and Endo in Kobayashi, 1935	128
<i>Mapania jiangnanensis</i> sp. nov.	129
Family ONCHONOTOPSIDAE Shaw, 1966	130
Genus LUYANHAOASPIS Peng, Babcock, and Lin, 2001b	130
<i>Luyanhaoaspis decorosa</i> (Peng, Lin, and Chen, 1995)	131
<i>Luyanhaoaspis inflata</i> sp. nov.	132
<i>Luyanhaoaspis</i> sp. cf. <i>L. inflata</i> sp. nov.	132
Genus HUAYUANELLA gen. nov.	133
<i>Huayuanella paibiensis</i> gen. et sp. nov.	134
<i>Huayuanella zhiqiangi</i> gen. et sp. nov.	134
Family PAPYRIASPIDIDAE Whitehouse, 1939	135
Genus PIANASPIS Saito and Sakakura, 1936	135
<i>Pianaspis attenuata</i> (Lermontova and Chernysheva in Chernysheva, 1950)	137
<i>Pianaspis sinensis</i> (Yang in Zhou et al., 1977)	139
Genus WANGCUNIA Peng, Lin, and Chen, 1995	140
<i>Wangcunia wangcunensis</i> Peng, Lin, and Chen, 1995	140
Genus PARAPIANASPIS gen. nov.	141
<i>Parapianaspis hunanensis</i> gen. et sp. nov.	142
Family RHYSSOMETOPIDAE Öpik, 1967	143
Genus RHYSSOMETOPUS Öpik, 1967	143
<i>Rhyssometopus zhongguoensis</i> Zhou in Zhou et al., 1977	143
Family SOLENOPLEURIDAE Angelin, 1854	144
Genus CHANGQINGIA Lu and Zhu in Qiu et al., 1983	144
<i>Changqingia intermedia</i> (Walcott, 1906)	144
<i>Changqingia laevis</i> Peng, Lin, and Chen, 1995	145
Genus MENOCEPHALITES Kobayashi, 1935	145
<i>Menocephalites</i> sp. cf. <i>M. pauperata</i> (Walcott, 1906)	146
<i>Menocephalites hunanensis</i> sp. nov.	147
<i>Menocephalites?</i> sp. 1	148
<i>Menocephalites?</i> sp. 2	148
Family SHUMARDIIDAE Lake, 1907	149
Genus OCULISHUMARDIA Peng, Babcock, Hughes, and Lin, 2003	149
<i>Oculishumardia hunania</i> Peng, Babcock, Hughes, and Lin, 2003	149
Genus LIMBISHUMARDIA gen. nov.	150
<i>Limbishumardia wangcunensis</i> gen. et sp. nov.	151
PTYCHOPARIOIDAE FAMILY UNCERTAIN	152
Genus PSEUDOMAPANIA Yuan and Yin, 1998	152
<i>Pseudomapania cylindrica</i> Yuan and Yin, 1998	152

Suborder OLENINA Burmeister, 1843	153
Superfamily OLENOIDEA Burmeister, 1843	153
Family OLENIDAE Burmeister, 1843	153
Subfamily OLENINAE Burmeister, 1843	153
Genus OLENUS Dalman, 1827	153
<i>Olenus austriacus</i> Yang in Zhou <i>et al.</i> , 1977	153
<i>Olenus punctatus</i> sp. nov.	155
Subfamily PELTURINAE Corda, 1847	156
Genus SULCARECLAVA gen. nov.	156
<i>Sulcareclava sagitta</i> gen. et sp. nov.	157
Suborder HARPINA Whittington, 1959	158
?Family HARPIDIDAE Whittington, 1950	158
Genus BAIKADAMASPIS Ergaliev, 1980	158
<i>Baikadamaspis sinensis</i> (Yang in Zhou <i>et al.</i> , 1977)	159
<i>Baikadamaspis</i> sp. cf. <i>B. granulosa</i> (Yuan and Yin, 1998)	161
<i>Baikadamaspis linearis</i> sp. nov.	161
<i>Baikadamaspis paibiensis</i> sp. nov.	163
<i>Baikadamaspis</i> sp.	165
TRILOBITA ORDER UNCERTAIN	165
Family BURLINGIIDAE Walcott, 1908	165
Genus SCHMALENSEEIA Moberg, 1903	165
<i>Schmalenseeia sinensis</i> Yang in Yin and Li, 1978	167
<i>Schmalenseeia fusilis</i> sp. nov.	170
UNDETERMINED TRILOBITE SCLERITES	171
Family UNDETERMINED	171
Genus Undetermined	171
Undetermined larva	171
Undetermined pygidium 1	172
Undetermined pygidium 2	172
Undetermined librigena 1	173
Undetermined librigena 2	173
Undetermined librigena 3	173
Undetermined librigena 4	174
Undetermined hypostome 1	174
Undetermined hypostome 2	175
Order EODISCIDA Kobayashi, 1939	175
Suborder EODISCINA Kobayashi, 1939	175
Superfamily EODISCOIDEA Raymond, 1913	175
Family EODISCIDAE Raymond, 1913	175
Genus HELEPAGETIA Jell, 1975	175
<i>Helepagetia bitruncula</i> Jell, 1975	176
REFERENCES	177
INDEX OF SPECIES AND GENERA	191
PLATES	199

INTRODUCTION

This is the second and final volume documenting the polymerid trilobites from the Huaqiao Formation of northwestern Hunan, China. This volume includes the systematics of ptychopariids, eodiscids, trilobites of uncertain affinity, and some undetermined sclerites.

Most geologic information concerning the Huaqiao Formation of northwestern Hunan, including lithostratigraphic data, biostratigraphic zonation, and detailed descriptions of three stratigraphic sections, is contained in Volume 1 of this two-part set. For convenience, however, stratigraphic range charts for the polymerids identified from the Paibi, Paibi-2, and Wangcun sections are repeated in this volume. In the following descriptions of fossil material, the collection numbers preceded by a P or W refer to levels in meters above the base of the Huaqiao Formation in the Paibi and the Wangcun sections, respectively. Numbers preceded by a P β refers to level in meters above an arbitrary zero point (at the base of the massive breccia in the basal part of Bed 58) in the Paibi-2 section.

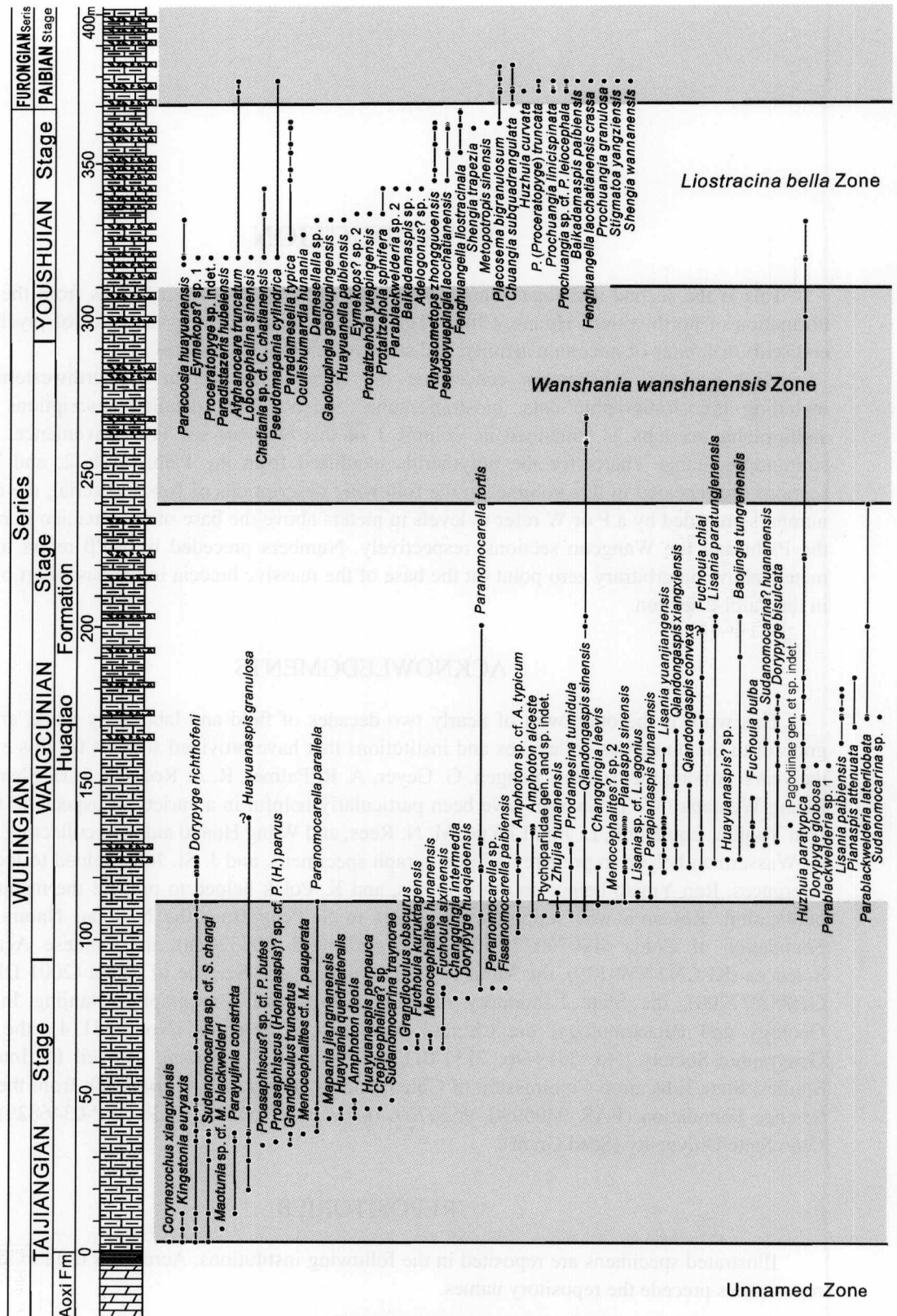
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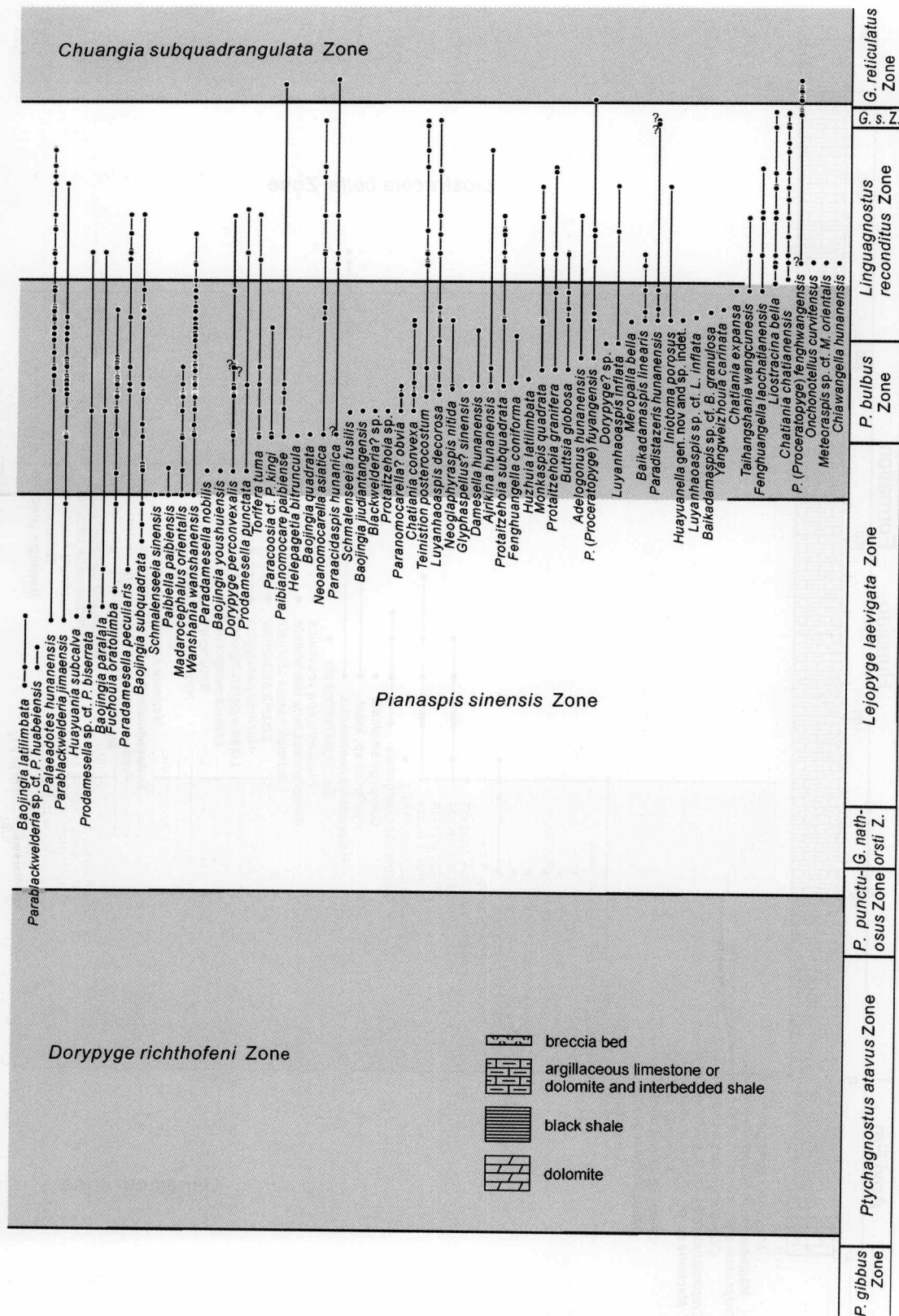
REPOSITORIES

Illustrated specimens are repositied in the following institutions. Acronyms used to identify the repositories precede the repository names.

- | | |
|------|---|
| CUGB | China University of Geology (Beijing), Beijing, China |
| GMC | Geological Museum of China, Beijing, China |
| HIT | Nanjing Institute of Geology and Mineral Resources, the Chinese Academy of Geological |

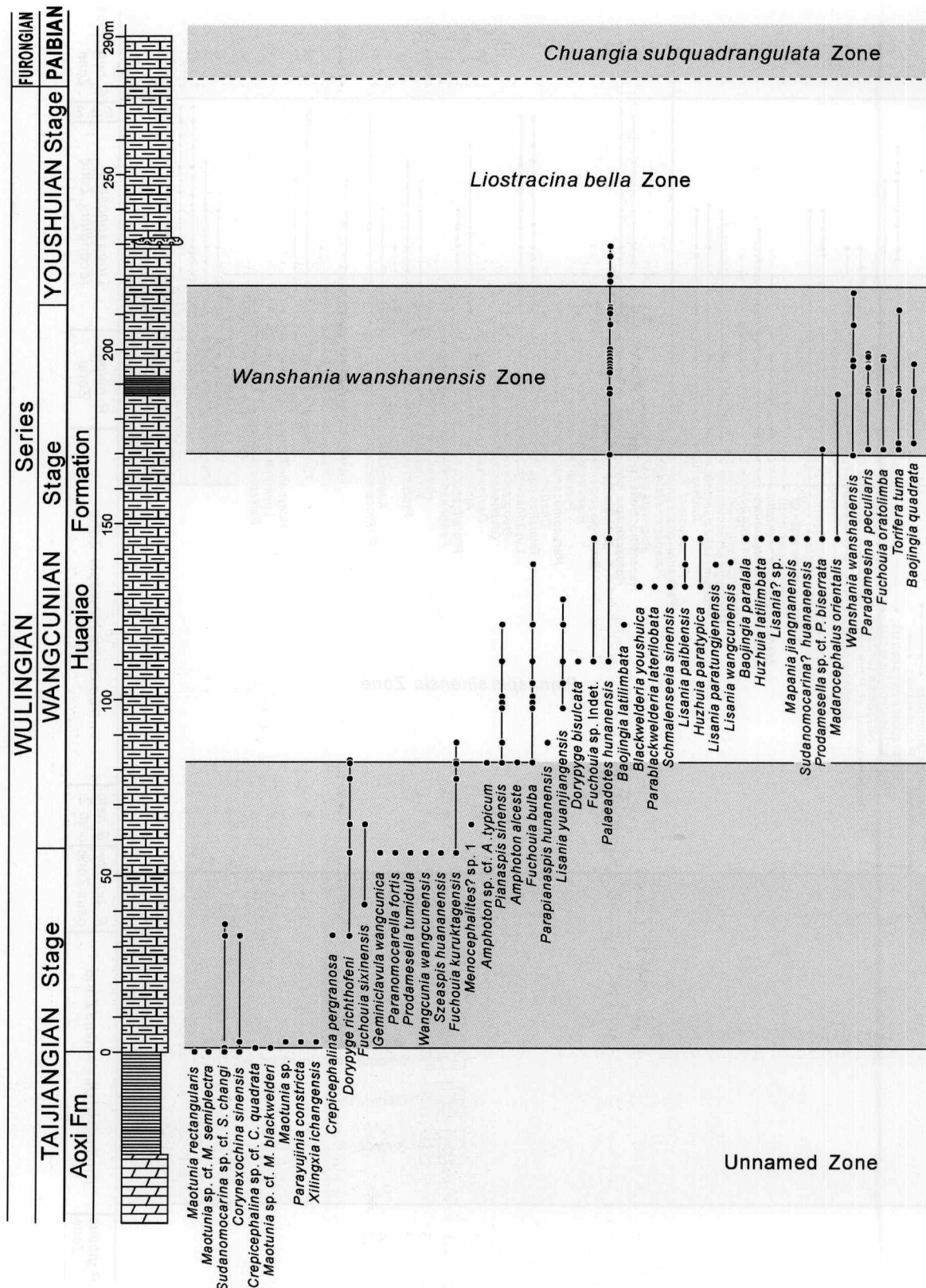


Text-figure 1. Zonation and observed stratigraphic distribution of non-agnostoid species in the Huaqiao Formation for the agnostoid stratigraphic distribution and zonation of the same section.

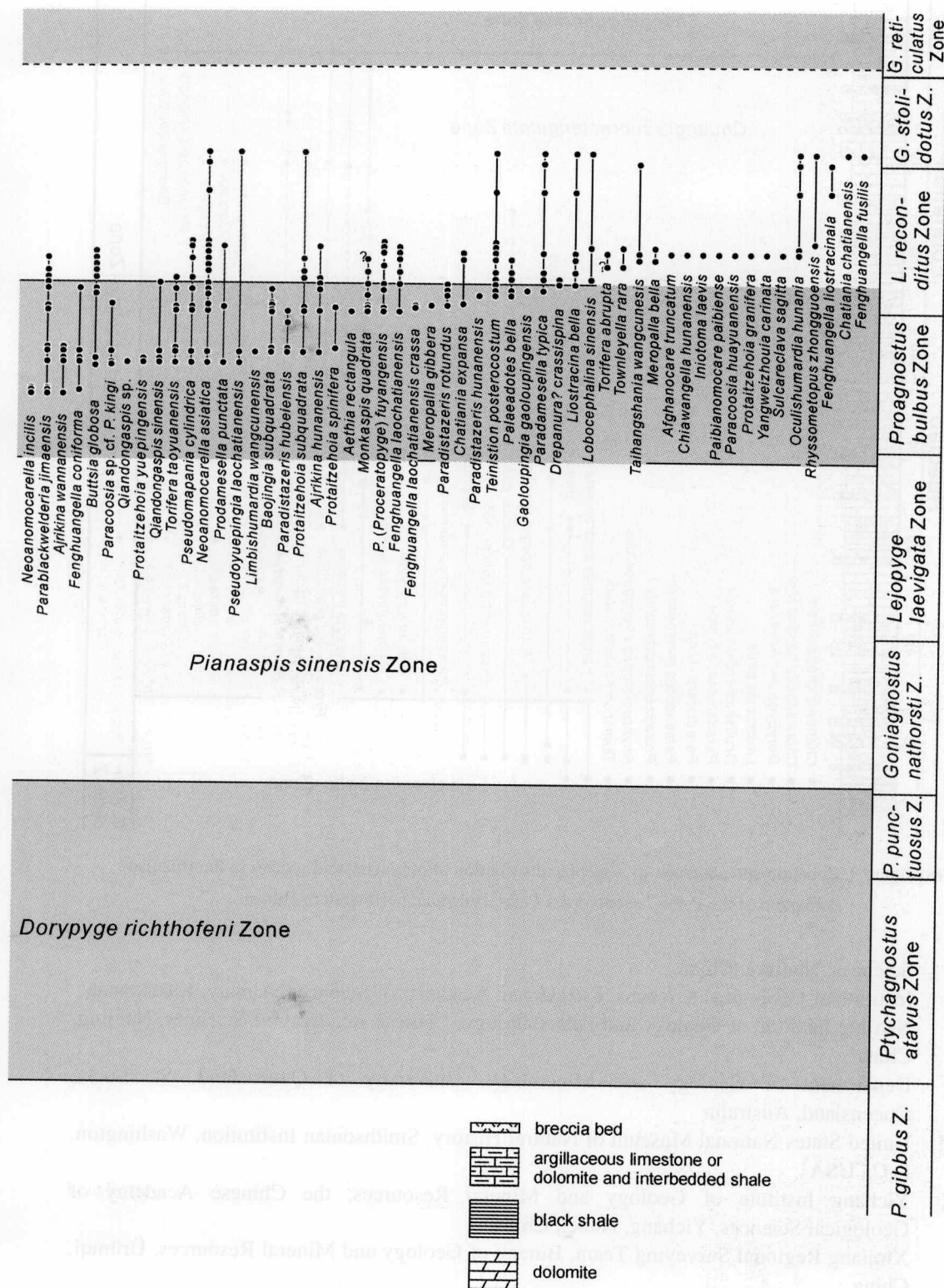


Formation of the Paibi section near Paibi, Huayuan, northwestern Hunan; see Peng and Robison (2000)

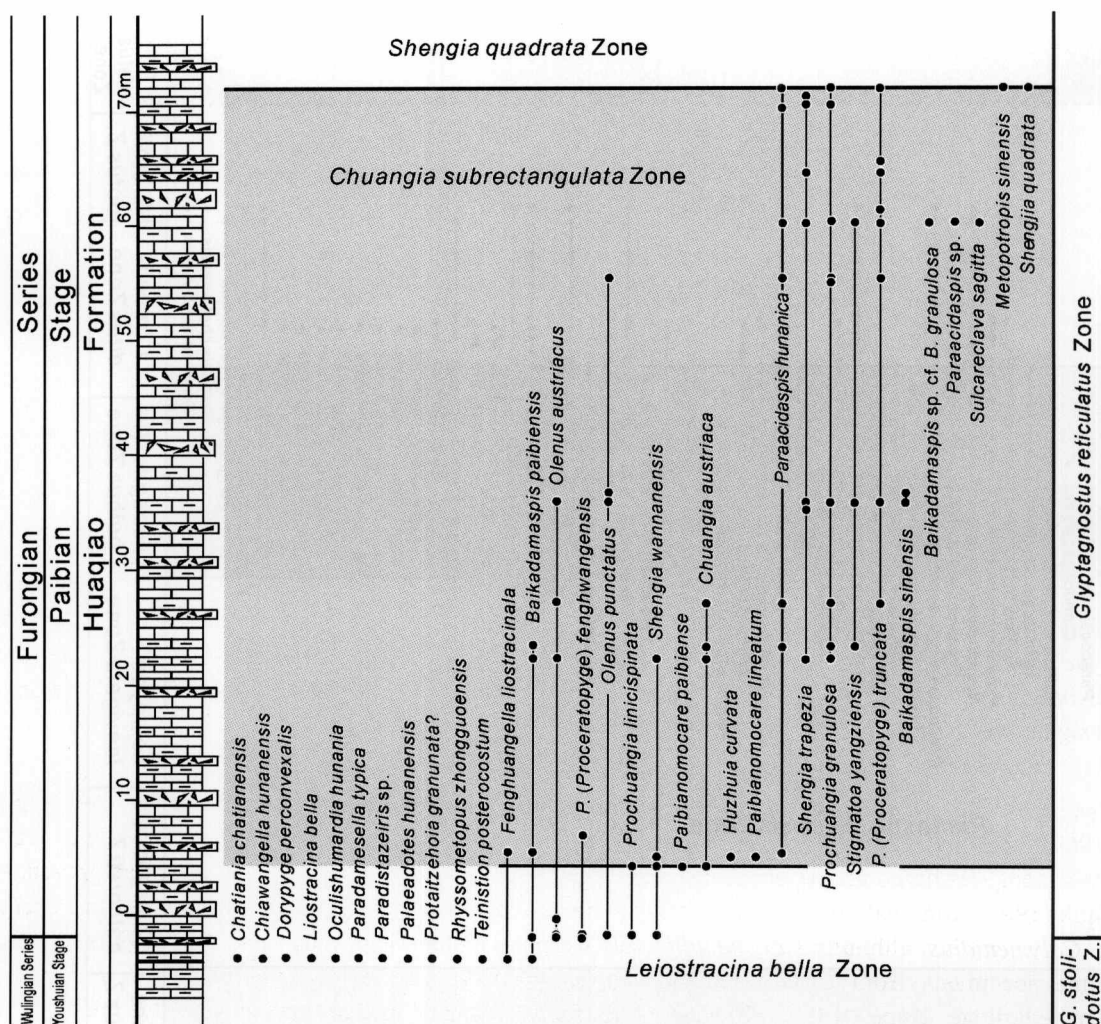
Their agnostoid zonation is adopted in this figure. Scale in meters.



Text-figure 2. Zonation and observed stratigraphic distribution of non-agnostoid species in the Huaqiao stratigraphic distribution and zonation of the same section.



Formation of the Wangcun section, northwestern Hunan; see Peng and Robison (2000) for the agnostoid. Their agnostoid zonation is adopted in this figure.



Text-figure 3. Zonation and observed stratigraphic distribution of non-agnostoid species in the Huaqiao Formation of the Paibi-2 section near Paibi, Huayuan, northwestern Hunan.

Sciences, Nanjing, China

IGSK Institute of Geological Sciences, Kazakhstan Academy of Sciences, Almaty, Kazakhstan

NIGP Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, Nanjing, China

UQF Department of Geology and Mineralogy, University of Queensland, St. Lucia, Queensland, Australia

USNM United States National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA

YIGM Yichang Institute of Geology and Mineral Resources, the Chinese Academy of Geological Sciences, Yichang, Hubei, China

XTR Xinjiang Regional Surveying Team, Bureau of Geology and Mineral Resources, Ürümqi, China

SYSTEMATIC PALEONTOLOGY

Order PTYCHOPARIIDA Swinnerton, 1915

Suborder PTYCHOPARIINA Richter, 1933

Superfamily PTYCHOPARIOIDAE Matthew, 1887

?Family PTYCHOPARIIDAE Matthew, 1887

Genus TOWNLEYELLA Öpik, 1967

Type species. *Townleyella townleyi* Öpik, 1967 (p. 385, pl. 8, figs. 4, 5; text-fig. 147), from the *Glyptagnostus stolidotus* Zone, O'Hara Shale, western Queensland, Australia; by original designation.

Remarks. The suprageneric placement of this genus is problematic. When it was erected, Öpik (1967) classified it as of uncertain superfamilial assignment within the Ptychopariina. This placement was based on the presence of bacculae in *Townleyella townleyi*. The bacculae prevented Öpik (1967) from making a conclusive assignment. Öpik (1967) noted the similarity of *Townleyella* to *Calymenidius*, although *Calymenidius* lacks a preglabellar field. Yuan and Yin (1998) referred some specimens from eastern Guizhou to *Townleyella*, and placed the genus in the family Paracedariidae Húpe, 1955. However, the facial sutures, which are apparently not of the cerdariiform type, make an assignment to the Paracedariidae unsatisfactory. Because bacculae are variably presented in the Chinese material of *Townleyella*, we follow Jell and Adrain (2003) in assigning the genus with question to the Ptychopariidae.

Townleyella rara Yuan and Yin, 1998

Plate 45, figures 10–12

1998 *Townleyella rara* Yuan and Yin, p. 147, 148, pl. 2, figs. 11, 12, 14, 15, ?13.

?1998 *Cathayanella granulosa* Yuan and Yin (in part), p. 149, pl. 2, fig. 10 only.

1998 *Townleyella similis* Yuan and Yin, p. 147, 148, pl. 2, figs. 16, 17.

Holotype. Cranium with a broken glabella (Yuan and Yin, 1998, pl. 2, fig. 11, NIGP 127910), from the *Glyptagnostus stolidotus* Zone, Jimachong, Yuping, eastern Guizhou.

New material. An early meraspid cranium and two holaspid crania (illustrated specimens NIGP 138366, 138367), in collections W223.2 and W228.3.

Remarks. The holaspid crania from Wangcun, northwestern Hunan, agree in all respects with the