



**PETROLOGY OF THE LATE JURASSIC TO EARLY CRETACEOUS
COALS FROM THE YANG CAO GOU BASIN, NORTHEAST CHINA**

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Contents

Abstract.....	A
List of Figures.....	i
List of Tables.....	I
Acknowledgments.....	X

PETROLOGY OF THE LATE JURASSIC TO EARLY CRETACEOUS COALS FROM THE YANG CAO GOU BASIN

CHAPTER 1. THE YANG CAO GOU COAL DEPOSITS

1.1 INTRODUCTION.....	1
1.2 INTRODUCTION TO SONGLIAO BASIN.....	2
1.3 AIMS OF THE STUDY.....	3
1.4 PREVIOUS WORK.....	4

CHAPTER 2. REGIONAL GEOLOGY

2.1 STRATIGRAPHY.....	5
2.1.1 Lower Triassic.....	5
2.1.2 Upper Jurassic.....	7
2.1.3 Early Cretaceou.....	11

Chapter 3. METHODOLOGY AND TERMINOLOGY

3.1 INTRODUCTION.....	18
3.2 ANALYTICAL METHODS.....	21
3.2.1 Samples.....	21
3.2.2 Sample preparation.....	22
3.2.3 Optical equipment.....	22
3.2.4 Maceral analysis and microlithotype analysis.....	23
3.2.5 Reflectance measurements	24
3.2.6 Rock-Eval and total organic carbon analysis.....	25

Chapter 4. COAL MEASURES OF THE YANG CAO GOU BASIN

4.1	STRATIGRAPHY OF THE COAL MEASURES.....	28
4.2	COAL SEAM NOMENCLATURE, DISTRIBUTION AND QUALITY.....	31
4.3	DEPOSITIONAL ENVIRONMENTS OF THE COAL MEASURES.....	33
4.4	PALAEOCLIMATE.....	35

Chapter 5. PETROLOGY AND GEOCHEMISTRY OF COALS FROM THE YANG CAO GOU BASIN

5.1	INTRODUCTION.....	37
5.2	MICROSCOPIC CHARACTERISTICS - MACERALS.....	38
5.2.1	Vitrinite.....	41
5.2.2	Inertinite.....	43
5.2.3	Liptinite.....	43
5.2.4	Mineralogy and coal geochemistry.....	45
5.3	LITHOTYPES AND MICROLITHOTYPES OF THE YANG CAO GO COALS.....	48
5.3.1	Megascopic characteristics - lithotypes.....	49
5.3.2	Microlithotypes.....	54
5.4	DEPOSITIONAL ENVIRONMENTS OF THE YANG CAO GOU COALS.....	55
5.5	RANK DETERMINATION.....	67

CHAPTER 6. COAL ORGANIC GEOCHEMISTRY AND OIL SOURCE POTENTIAL

6.1	INTRODUCTION.....	68
6.2	PREVIOUS WORK.....	70
6.3	EXPERIMENTAL.....	70
6.4	RESULTS AND DISCUSSION.....	71

CHAPTER 7. CONCLUSIONS 80

References 84

APPENDIX I. Sample Location

APPENDIX II. Plates

ABSTRACT

The Yang Cao Gou Basin, is situated in Jiutai county to the northeast of Changchun city, Jilin province, and is one of several sedimentary coal sub-basins that developed in the late Jurassic to early Cretaceous along the eastern edge of the Songliao Basin, northeast China. The basin contains Jurassic and Cretaceous coal-bearing strata totaling over 2355 m in thickness and lying unconformably above granitic basement rocks.

Petrographic, reflectance, chemical and organic geochemistry studies on coal and shale samples representative of the coal seams of the different sub-basin have been carried out. Vitrinite is the dominant maceral observed in most samples. The high amount of vitrinite and low amount of inertinite indicate a reducing environment. Interpretation of lithotype variations within the seams indicates that the formation of the Yang Cao Gou coals were formed in wet forest-type swamps. Reflectances measured on vitrinite range from 0.35 to 0.67% placing the Yang Cao Gou coals between brown coal and bituminous coal.

There are three groups of coals deposited in the basin: Group II coals formed in shallow lakes, Group I coals formed in fan deltas, and lower Group coals formed in inter-lobe depressions within alluvial fans.

The Yang Cao Gou coal deposits shows a close relationship with paleoenvironments. The topographic lows in front of and between alluvial fans, in fan delta plains and lake shores are the most favourable areas for coal accumulation.

LIST OF FIGURES

<u>FIGURE</u>	<u>PAGE</u>
1.1 Location map of Yang Cao Gou Basin	2
1.2 Geological map of the Jurassic to early Cretaceous deposition in the Songliao Basin.	3
2.1 Correlation of the coal measures, eastern margin of the Songliao Basin	5
2.2 Geology of the eastern edge of the Songliao Basin	5
2.3 Location map of the coal-bearing sub-basins, eastern margin of the Songliao Basin	6
2.4 Palaeogeographic map of the Sha Hezi Formation.	9
2.5 Isopach map of the Yingcheng coal measures.	10
2.6 Palaeogeographic map of the Yingcheng Formation.	14
3.1 Stages of coalification.	19
3.2 Point graticule used for microlithotype analysis	23
4.1 Geological map of the Yang Cao Gou Basin	28
4.2 Correlation of coal-bearing sequences of the Yingcheng Formation.	29
4.3 Correlation and seam distribution of Group II coal beds in the upper member of the Yingcheng Formation.	30
4.4 Isopachs of the lower Group coals, Yang Cao Gou Basin	31
4.5 Isopachs of Group I coals, in lower member of the Yingcheng Formation	31
4.6 Sample localities and isopach map of Group II coals in Yingcheng Formation	32
4.7 Distribution of Group II coals	32
4.8 Contours of ash contents of Group II coals	32
4.9 Contours of calorific value of the Group II coals	33
4.10 Cross section of the K_1y^{3-2} sequences, Yang Cao Gou Basin	33
4.11 Stratigraphy of the alluvial fan sequences, lower coal member	34

<u>FIGURE</u>	<u>PAGE</u>
4.12 Stratigraphy of the fluvial deposition of K1y3-1 and K1y3-2	34
4.13 Stratigraphy of the lake shore sequence of the Yingcheng Formation	34
4.14 Sedimentary facies variation, Yingcheng Formation	35
5.1 Maceral compositions of Yang Cao Gou Basin coals	39
5.2 Maceral compositions of the coal seams II1e, II2e and seam I	40
5.3 Maceral composition of coal seams II _{1w} , II _{2w} and II	42
5.4 Frequency distribution of macerals in the Yang Cao Gou Basin	43
5.5 Densinite plus attrinite vs depth for Groups I and II coals	45
5.6 Vitrinite reflectance vs volatile matter content	47
5.7 H/C and O/C atomic ratios for Group II coals	48
5.8 Relationship between vitrinite reflectance and calorific value	49
5.9 Variation in lithotypes and macerals of the Group II coals	52
5.10 Variation in lithotypes and macerals of the Group I coals	53
5.11 Variation in lithotypes and macerals of the lower Group coals	54
5.12 Average maceral composition of Yingcheng Formation	54
5.13 Microlithotype composition of Yang Cao Gou coals	55
5.14 Maceral compositions of Groups I, II and lower Group coals	57
5.15 Ternary composition diagrams by lithotype	57
5.16 Coal facies diagrams for Yingcheng Formation lithotypes	58
5.17 Maceral compositions of coal samples indicating depositional environment based on inferred lithotypes	59
5.18 Ternary facies diagram for the Yang Cao Gou Basin coals	60
5.19 Ternary diagram showing depositional environments of Permian coals from the Cooper Basin	61
5.20 Ternary facies diagram of the microlithotype compositions of coals in Yingcheng Formation plotted on the Smyth model	62
5.21 Variation and distribution of average maceral compositions of seam II	63
5.22 Variation of average maceral compositions of seams II ₁ and II ₂ and seams I ₁ , I ₂ , I ₃ , I ₄ , and I ₅	64

<u>FIGURE</u>	<u>PAGE</u>
5.23 Variation and distribution of average maceral composition of seams II, II _{1e} , I ₁ , I ₂ , I ₃ , I ₄ and I ₅	64
5.24 Borehole and collieries location map	64
5.25 Relationship between ash content and attrinite plus densinite	65
5.26 Relationship between telovitrinite and attrinite plus densinite	65
5.27 Maceral compositions of the Zone 1, Zone 2 and Zone 3 of the coals	65
5.28 Palaeogeographic map of K ₁ Y ²	66
5.29 Palaeogeographic map of K ₁ Y ³⁻¹	67
5.30 Palaeogeographic map of K ₁ Y ³⁻²	67
5.31 Reflectance of vitrinite In Yang Cao Gou Basin coals in relation to the German and A. S. T. M. rank classifications of coals	68
6.1 Kerogen type and n-alkane distribution, Songliao Basin	70
6.2 Kerogen type and maturity in coals and shales from Yang Cao Gou and adjacent sub-basins	71
6.3 R _{max} vs Hydrogen Index as determined by Rock-Eval pyrolysis	72
6.4 TOC vs Hydrogen Index as determined by Rock-Eval pyrolysis	72
6.5 Hydrogen Index vs three maceral groups for samples from Songliao Basin	72
6.6 Triangular diagram of n-alkane + n-alkene distribution	73
6.7 Variation in yield of normal hydrocarbons with ratio of normal hydrocarbons to C ₆ -C ₈ aromatics for pyrolysates of Songliao Basin coals	74
6.8 Variation in yield of C ₆ -C ₈ phenols in pyrolysis-GC with maturation as measured by T _{max} from Rock-Eval analysis	74
6.9 Variation in yield and composition of normal hydrocarbons in pyrolysis-GC with proportion of liptinite for eastern Songliao Basin coals	75
6.10 Relationship between Paraffin Index and Hydrogen Index for Songliao Basin coals	75
6.11 Plot of vitrinite reflectance vs production index	76
6.12 Variation in composition of normal hydrocarbons with proportion of liptinite in Songliao Basin coals	76

<u>FIGURE</u>	<u>PAGE</u>
6.13 relationship between free (S_1) hydrocarbons and the hydrogen index using conventional Rock-Eval pyrolysis data for eastern Songliao Basin coals	77
6.14 Representative pyrolysis-GC of sample 892-101A	77
6.15 Representative pyrolysis-GC of sample 892-119	78
6.16 Representative pyrolysis-GC of sample 892-Y5	79

LIST OF TABLES

<u>TABLE</u>		<u>PAGE</u>
2.1	Type section of the Huoshinling Formation, eastern margin of the Songliao Basin	8
2.2	Type section of clastic member of Shahezi Formation	10
2.3	Type section of the lower member of the Yingcheng Formation	12
2.4	Stratigraphy of the middle member of Yingcheng Formation	13
2.5	Stratigraphy of the upper member of the Yingcheng Formation	14
2.6	Stratigraphy of the Denglouku Formation	16
3.1	Coal maceral classification	19
3.2	Microlithotype analysis using a 20 point graticule	24
3.3	Rock-Eval interpretive guidelines	27
4.1	Lithology of units in the upper member of the Yingcheng Formation	30
4.2	Proximate analysis data for some Group I coals in the Yang Cao Gou Basin	32
4.3	Proximate analysis data for some Group II coals in the Yang Cao Gou Basin	34
4.4	Jurassic to Cretaceous climate variations of North China	36
5.1	Results of petrographic analyses of coal and shale samples	37
5.2	Results of the ultimate analysis of Group II coals, Yang Cao Gou Basin	44
5.3	Lithotype terminology used in this study	51
5.4	Microlithotype compositions of Group II coals	51
5.5	Reflectance data from Yang Cao Gou and adjacent basin coals	61
6.1	Location of samples other than Yang Cao Gou Basin coals	71
6.2	Rock-Eval and TOC data from coals and shales samples	72
6.3	Petrographic and geochemical data on selected Songliao Basin coals	76

Statement

To the best of the writer's knowledge, and except where due reference is made in the text of the thesis, this thesis contains no copy or paraphrase of previously published material nor any material that has been accepted for the award of any other degree or diploma in any university.

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