

地质英语会话

陈亚东 著

*English Conversations
in Geology*



地质出版社

English Conversations

in Geology

地质英语会话

Chen Yadong

陈亚东 著

Geological Publishing House

地质出版社

English Conversations in Geology

地质英语会话

Chen Yadong

陈亚东 著

责任编辑：朱西岭

地质出版社出版发行

(北京和平里)

地质出版社印刷厂印刷

(北京海淀区学院路29号)

新华书店总店科技发行所经销

开本：787×1092¹/₃₂ 印张：9.375 字数：200000

1989年10月北京第一版·1989年10月北京第一次印刷

印数：1—2230册 国内定价：4.05元

ISBN 7-116-00455-6/P·380

前 言

很多人有集邮和摄影之类的业余爱好，而我在澳大利亚攻读博士学位期间，养成了收集应用于现实生活各种场合的英语单词、短语和句型的业余爱好。尽管《地质英语会话》中所有的会话都是我重新创作的，但它们主要源于我所收集的各类地质人员在不同的地质科目中应用的英语。由于地质学涉及的范围相当广，因此我并不自诩本书包罗万象。实际上，本书涉及的只是我所经历过的一些情况，并且侧重于教学活动方面。我希望本书对那些想了解澳大利亚的地质学学生及其有关人员可能说些什么，会话中通常运用哪些英语单词、短语和句型的人能有所帮助。

由于我不是语言学专业的学生，而且本书所有的工作都是在我有限的业余时间内完成的，因此错误和缺点在所难免。欢迎读者批评和提出建议。

A. J. R. 怀特教授和 R. C. 普赖斯博士曾为我批改原稿，P. 巴伯夫人帮助检查了最后一稿并提出了不少有助于改进的建议，I. 曼顿夫人、R. 沃莫尔德先生和 N. 佩特尔先生也曾不同阶段阅读草稿并提出修改和批评意见，在此一并致谢。我还要感谢我妻子春琳的热心支持和为此作出的牺牲。

最后，但并非最不重要的是，我非常感激袁奎荣教授的长期的支持鼓励和广西外语培训中心英语教师的重要指导。我能于1983年以620分的成绩通过托福考试跟这两方面的帮助是分不开的。那是我学习英语过程中很重要的一步。

CONTENTS

Foreword	I
----------------	---

Preface	IV
---------------	----

UNIT 1 CONVERSATIONS IN THE FIELD

1 A first year excursion (1)	1
2 A first year excursion (2)	4
3 Preparation for a mapping trip (1)	7
4 Preparation for a mapping trip (2)	11
5 The Gold Rush	15
6 Broken Hill	18
7 Meta-muddy siltstone	20
8 An unconformity	23
9 Amphibolite	26
10 Dolomite	29
11 A fluorite mine	32
12 Tillite	34
13 A dolerite dyke	37
14 Migmatite	40
15 Metamorphic facies	43
16 Mesoscopic folds	46
17 Pegmatite	49
18 Fault breccia	52
19 On the way for a field trip	55

20 A sampling trip (1).....	59
21 A sampling trip (2).....	62
22 At a volcano lookout.....	64
23 Xenoliths in a basalt.....	68
24 A welded ash flow tuff.....	71
25 A two-mica granite.....	73

UNIT 2 CONVERSATIONS IN LABORATORIES AND PRACTICAL CLASSES

26 Lawsonite and cordierite.....	76
27 Enstatite.....	79
28 Fluorite in a granite	82
29 Zircon and monazite.....	84
30 Opaque minerals	87
31 Hematite and ilmenite.....	90
32 Thin section making	93
33 Electron probe analysis.....	96
34 Mineral separation	100
35 Probing zircons	104
36 Calibrating the ion probe	107
37 Iron titration (1).....	110
38 Iron titration (2).....	113
39 Flame photometry	115
40 Spiking	118
41 Mass spectrometer operation	122
42 Fold terminology	125
43 Faults	128
44 Stereographic projection	131

45 Aerial photographs134

46 Aerial photographs and landsats137

UNIT 3 CONVERSATIONS ON OTHER OCCASIONS

47. A progress report140

48 Exam supervision143

49 An honours degree147

50 A computer150

51 Incompatible elements154

52 Hawaiite and mugearite157

53 Borrowing magazines159

54 Literature survey162

55 Interlibrary loan166

56 Open Day exhibition170

57 Course enquiry174

58 Trace element modelling177

59 Preparation for a paper180

目 录

序.....	III
--------	-----

前言.....	VI
---------	----

第一单元 关于野外地质的会话

一、一年级野外实习 (1)	183
---------------------	-----

二、一年级野外实习 (2)	184
---------------------	-----

三、填图实习的准备工作 (1)	186
-----------------------	-----

四、填图实习的准备工作 (2)	188
-----------------------	-----

五、黄金热	190
-------------	-----

六、布罗肯希尔	191
---------------	-----

七、变质泥质粉砂岩	193
-----------------	-----

八、不整合	194
-------------	-----

九、角闪岩	196
-------------	-----

十、白云岩	198
-------------	-----

十一、萤石矿	199
--------------	-----

十二、冰碛岩	200
--------------	-----

十三、粗玄岩脉	202
---------------	-----

十四、混合岩	204
--------------	-----

十五、变质相	205
--------------	-----

十六、中型褶皱	207
---------------	-----

十七、伟晶岩	208
--------------	-----

十八、断岩角砾岩	210
----------------	-----

十九、在一次出野外的途中	212
--------------------	-----

二十、一次取样的野外之行 (1)	214
二十一、一次取样的野外之行 (2)	215
二十二、在一个火山观景处	217
二十三、玄武岩中的捕虏体	219
二十四、熔结灰流凝灰岩	220
二十五、二云母花岗岩	222

第二单元 在实验室和上实验课时的会话

二十六、硬柱石和堇青石	224
二十七、顽火辉石	226
二十八、花岗岩中的萤石	227
二十九、锆石和独居石	229
三十、不透明矿物	230
三十一、赤铁矿和钛铁矿	232
三十二、磨制薄片	234
三十三、电子探针分析	236
三十四、矿物分离	238
三十五、用探针分析锆石	240
三十六、调校离子探针	242
三十七、用滴定法测量铁含量 (1)	243
三十八、用滴定法测量铁含量 (2)	245
三十九、火焰光度法	246
四十、加“稀释剂”	248
四十一、质谱仪的操作	250
四十二、褶皱术语	252
四十三、断层	253
四十四、极射赤平投影	255
四十五、航空照片	257

四十六、航空照片和卫星照片	259
第三单元 其它场合的会话	
四十七、进展报告	261
四十八、监考	263
四十九、优等生学位	265
五十、计算机	267
五十一、不相容元素	269
五十二、中长玄武岩和橄榄粗安岩	271
五十三、借杂志	272
五十四、文献检索	274
五十五、馆际图书互借	276
五十六、开放日展览会	278
五十七、询问课程	281
五十八、微量元素模拟	283
五十九、准备论文	284

UNIT 1 CONVERSATIONS IN THE FIELD

1. A first year excursion (1)

In the field, between a lecturer (Mark) and several students (Helen, Bruce, John, Peter and Keith)

At Stop 1

Mark (M): Right, this is our first stop. First of all, check your handout and mark your present locality on the map. Then I want you to identify the rock types present. Are they igneous, or sedimentary, or metamorphic rocks? What minerals are present? You also need a detailed description of grain size. For example, are they coarse-grained, medium-grained or fine-grained? If you identify a rock as igneous, is it porphyritic or not? If it is a sedimentary rock, are there any primary sedi-

mentary features? If you observe carefully, you may also find some structural features. Anyway, let's have a look around first.

Bruce (B): This is a sequence of sedimentary rocks, I think. You see, the bedding is so well developed. These look like cross bedding.

M: That's exactly right. Any other primary sedimentary features?

Helen (H): Yes, I saw some ripple marks here.

M: Good. By the way, how do you recognize bedding?

H: By looking at the variation in colour, grain size, composition and the degree of weathering.

M: Fine. Since these are layered rocks, what other observation can we make?

B: The scale of the layering.

M: Right.

H: We should also measure the strike and the dip of the bedding.

M: Yes, then how do you measure the strike?

H: Put the compass parallel to a

horizontal line on the bedding plane, then read off the bearing.

M: Correct. Remember that the true dip is always perpendicular to the strike. ...

Has anybody noticed any variation in grain size within an individual layer?

B: Yes, within the unit here, the fine sand grades up into clay.

M: Good observation. This feature is called graded bedding.

New words

excursion	[iks ke:ʃən]	n.	短途旅行, (集体)游览
igneous	[ˈɪɡniəs]	a.	火成的
sedimentary	[sedɪˈmentəri]	a.	沉积的
metamorphic	[metaˈmɔ:fɪk]	a.	变质的
rock	[rɒk]	n.	岩石
structural	[ˈstrʌktʃərəl]	a.	构造的
porphyritic	[pɔ:fiˈritɪk]	a.	斑状
bedding	[ˈbedɪŋ]	n.	层理
cross bedding	[krɒs][ˈbedɪŋ]		交错层理
graded bedding	[ˈɡreɪdɪd][ˈbedɪŋ]		粒级层理, 递变层理
ripple mark	[ˈrɪpl][mɑ:k]		波痕
weathering	[ˈweðərɪŋ]	n.	风化
strike	[straɪk]	v. & n.	走向
dip	[dɪp]	v. & n.	倾斜, 倾向

bearing	[ˈbeərɪŋ]	n.	方位, 方位角
compass	[ˈkæmpəs]	n.	罗盘
fine	[faɪn]	a.	细的, 细粒的
sand	[sænd]	n.	砂
clay	[kleɪ]	n.	粘土
observation	[ˌɒbzəˈveɪʃən]	n.	观察

2. A first year excursion (2)

Continued from Conversation 1

At Stop 2

M: This is Stop 2. Have a look at the rocks here, compare them with those we've already seen at stop 1 and try to work out the similarities and differences.

Peter(P): Both are layered.

M: That's a similarity.

P: The rocks here are harder.

M: Correct. Notice that the rocks here are recrystallized.

John (J): Is this hornfels?

M: Yes, but not in a strict sense. What rock type might have been present prior to metamorphism?

P: Shale.

M: Is the hornfels here a high or a

low grade thermally metamorphosed rock?

J: Low grade.

M: How can you tell?

J: Because the degree of recrystallization is low. Some primary components still remain. In addition, the original layering is recognizable.

M: That's correct.

At Stop 3

M: This is our last stop for today. First, have a look at the rocks and then tell me what rock types are present.

Keith (K): I think this is an igneous rock.

M: Why?

K: Well, it's crystalline, fairly homogeneous, coarse-grained, and consists mainly of quartz and feldspars. It looks like a granite to me.

M: Great! Are there one or more types of feldspar in the rock?

P: There are definitely two types of feldspar present, a pinkish K-feldspar and a greyish plagioclase.

- M: That's right. Then how should we classify the granitoid here?
- P: I beg your pardon. I don't quite understand your question.
- M: Well, let me put it another way. Is it a granite or a granodiorite?
- P: What's the difference between a granite and a granodiorite?
- M: Is there anybody who can answer that question?
- K: The proportion of K-feldspar and plagioclase. Granodiorites contain more plagioclase.
- M: Good answer. What do you think the rock here is?
- K: To me, it appears to be a granodiorite.
- M: Correct. What kind of ferromagnesian minerals have you observed in the rock?
- P: Both hornblende and biotite.
- J: What's the glittering grain in this piece of rock?
- M: That could be a bit of pyrite.

New words

recrystallized	[ri:'kristəlaizid]	a. 重结晶了的
hornfels	['hɔ:nfels]	n. 角页岩
metamorphism	[,metə'mɔ:fizəm]	n. 变质 (作用)
shale	[ʃeɪl]	n. 页岩
crystalline	['kristəlain]	a. 晶质的, 结晶的
quartz	[kwɔ:ts]	n. 石英
granite	['grænit]	n. 花岗岩
feldspar	['feldspɑ:]	n. 长石
plagioclase	['pleidziəukleis]	n. 斜长石
granitoid	['grænitoid]	n. 花岗岩类
granodiorite	[,grænəu'daiərait]	n. 花岗闪长岩
K-feldspar		n. 钾长石
ferromagnesian	['ferəʊmæg'ni:ʃən]	a. 含铁镁的
hornblende	['hɔ:nblend]	n. 角闪石
biotite	['baɪətaɪt]	n. 黑云母
pyrite	['paɪərait]	n. 黄铁矿

3. Preparation for a mapping trip (1)

In the Department*, between two students
(Sam and Ian)

Sam (S): Ian, I haven't seen you for a while. Where have you been these days?

Ian (I): I had two exams last week, so I had to study very hard and go over all my notes and references.