

## PREFACE

My own interest in the work of Chinese mathematicians arises from their significant contributions to the qualitative theory of ordinary differential equations and, in particular, of plane quadratic systems. However, Chinese mathematics covers a very wide range. This is hardly surprising, since a quarter of the world's population is Chinese. It is predictable that during the next quarter century the importance of Chinese mathematics will increase greatly.

Although a number of Chinese mathematicians read English they may prefer to write in Chinese, either because writing is more difficult than reading or because they give the home market priority. Thus an ability to read Chinese mathematical papers will become increasingly useful.

Unfortunately the Chinese language presents special difficulties to a Western reader - even consulting a dictionary is a problem! The accompanying *Word Lists* and *Index* of characters are intended to alleviate these difficulties for those, like myself, who have neither the time nor the capacity to undertake a thorough study of the language.

The *Word Lists* contain around 1800 compound characters, together with their pinyin transcriptions (which determine their pronunciation) and English translations. These differ widely in their meanings (e.g. *at, always, theorem, holomorphic*), but could all be encountered in mathematical papers. They are listed according to some common feature (resp. *prepositions, time, logical notions, function*). It is believed that they will be more quickly memorised in this way than with the essentially random order of a dictionary. Moreover, in the case of technical terms, those in the same list will more frequently occur in the same paper. It will be observed that I have given some preference to my own mathematical interests. Those with different interests can easily supplement the lists here with their own specialised vocabulary by picking out the appropriate words from the *English-Chinese Mathematics Vocabulary* (Scientific Publishing House, Beijing, 1974). My intention has been to show the way, rather than to be encyclopaedic.

The compound characters have been chosen to introduce a broad range of simple characters in typical or significant situations. There is no attempt to be exhaustive, and there may be other ways of expressing the same English meaning. Compound characters are grouped, as far as possible, according to a common simple character. However, the simple character need not be the initial element of the compound character. This offers some advantage over the arrangement in a dictionary, since quite often the less common character appears first in a compound. Simple characters usually have several different meanings, even if they cannot express these meanings on their own. For those simple characters which head a group of compound characters the most relevant meanings are given here. For other meanings and other simple characters a dictionary should be consulted. Our aim is to be a supplement, rather than a substitute, for a dictionary.

English words also may have several meanings. In general the meaning of the English translation should be understood from the context. For example, in List 78 *right* means the opposite of *left*, not *correct*, and *left* does not mean *remaining*. In some cases additional help is provided. Thus in List 23 we have both *opposite (facing)* and *opposite (contrary)*.

The *Index* contains all those simple characters (about 950) which appear in the lists of compound characters. It gives also their pinyin transcriptions and the numbers of the lists in which they appear. The number is in italics when the simple character appears on its own in the corresponding list. The simple characters are ordered according to the total number of strokes and, for characters with the same number of strokes, according to their radicals. The meaning of this is explained in the *Introduction*.

It will often be possible to bypass the *Index* by consulting instead the *Key* which precedes the word lists. For each list, except the first, this indicates most of the simple characters which head a group of compound characters in that list (and occasionally a simple character which does not). Although the key may look formidable at first sight, it gives an overview of the more important characters and will become more useful as the reader becomes familiar with them.

In addition, an *Introduction to the Chinese Language* has been provided. It gives not only an account of the Chinese script and its pinyin transliteration, but also a brief outline of Chinese grammar. It is hoped that, in spite of the inevitable omissions and oversimplifications, this will be of help to the prospective reader of Chinese mathematical articles. The illustrative examples have been chosen to equip such a reader with a useful starting vocabulary of characters. The material here could form the basis for a short course, with the students constructing additional examples drawn from their own areas of specialization.

The preceding remarks should make clear our purpose. Advice on errors and omissions, and other suggestions for improvement, will be welcome from those whose knowledge of Chinese is much greater than my own.

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