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A List of the Musical and other Sound-Producing Instruments of the Chinese.

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The following account of the Musical Instruments of the Chinese is intended to include not only those now or formerly employed in the services of the State religion and representing the "classical" aspect of the subject, but also those in popular use in the theatres and temples, and found as musical toys at the great fairs, or in the hands of blind men, hawkers, beggars, and so forth. In so vast an empire the area of observation must necessarily be restricted, and it must not be forgotten that local forms may occur differing from those here described, for in this, as in most things connected with China, what is true or untrue of one place is not necessarily so of other places. The descriptions of instruments used in the Confucian services apply for the most part to the instruments in the Temple or College of Hangchow Fu, some of which are said to have been made at Soochow. The worship of Confucius, itself not of very great antiquity, seems gradually to have adopted, in name at least, the majority of the instruments traditionally used in religious or social ceremony by the ancient Chinese. For other instruments, if the locality to which the particular description

\[1\] It has in fact been restricted to the great cities of Hangchow and Peking and to parts of the provinces of Kiangsu and Shantung.
refers is not directly stated, it will be indicated by a place name printed in italic type; and it should not be assumed that the statements made apply to other places than those which are named. Completeness cannot be claimed either for the list itself or for the account of any one of the instruments. The aim has been to make the number of instruments as complete as possible in limited time and to secure that whatever information is given shall be accurate; but I am very conscious that even this has not been achieved. Where books have been used, more or less detailed references are generally given.

The origin of Music and musical instruments in China must be extremely remote, for it seems unreasonable to doubt that the great classical instruments existed in the second millennium B.C. in possibly as perfect a form as they have to-day. But lacking the ability to examine for this purpose the civilization of ancient China from a more critical point of view, I have not thought it worth while to repeat the traditions, however much truth they may contain, of the invention of this and that instrument which may be found in several European books.

A distinction may be noticed between the ancient native instruments with well defined monosyllabic names and the comparatively modern, perhaps foreign, instruments. The names of the latter are often transliterations, or of a descriptive nature. The ancient reed and stringed instruments especially, though few in number, yet seem to be superior to the more modern in construction; and in this connexion it may be interesting to remark the different relative importance given to noisy instruments of percussion in the Confucian, and in popular, orchestras. Of the forty-four instruments which accompany the hymn to Confucius all play the tune or a part in harmony except the six scarcely
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 audible Ch'ung Tu, while even between the lines or verses only three drums and the Chu and Yu are used. But in a Taoist band of six instruments five may be untuned instruments of percussion; and in the theatre the proportion of noise to music is as four or five to one. China is like other Asiatic nations in not using mechanical appliances like keys, bellows, etc.; but is perhaps rather peculiar in having no harp or bagpipes. Mrs. T. Richard, however, reproduces a Chinese drawing of an "ancient harp" with twelve strings, constructed like the old Persian harps [Engel, p. 59]. The foreign instruments and music seem, according to Chinese authorities, to have come chiefly from or through the tribes west and north of China, while the musical systems of Persia and Arabia seem to have had but little effect on Chinese music, and the use of only a few instruments can at all probably be traced to the great intercourse which existed between those countries and China in the middle ages. The Reverend F. W. Galpin writes: "I cannot help thinking that India has supplied some instruments, specially those used with a bow. In much later times the single beating reed as seen in the popular La Pa or Ch'un Kuan must have come from the west. It is characteristic of Arabia and the Mohammedan countries, and is also found in India."

In the following list the name of each instrument is given first in Roman letters according to the spelling of Professor Giles' Chinese-English Dictionary, secondly in Italics according to the Petit Dictionnaire Chinois-Français by F. S. Couvreur, S.J., and lastly in Chinese characters.¹ The names of several instruments and especially of musical toys are often vague and are subject to local variation, and

¹ Some exceptions will be found to this statement, but it is hoped that they are not such as to cause real difficulty or confusion.
no very definite principle has been followed in the selection
of one from several names to appear in capital letters at the
head of an article. Names of places are, with the exception
already mentioned, printed in Roman letters, and all other
Chinese words in Italics and, with very few exceptions,
according to the spelling of Giles' Dictionary. The French
spelling of at least one name for each instrument is added out
of respect for the fact that several of the most useful books on
the subject are in the French language.

It may be convenient to give here the dates of the
chief Dynasties referred to below:—The Three Dynasties
B.C. 2205—255, namely Hsia 2205, Shang 1766, Chou 1122—
255, Han B.C. 206—A.D. 220, Chin 265—419, Sui 589—
618, T’ang 618—907, Sung 960—1278, Yuan (Mongol)
1264—1368, Ming 1368—1644, Ch’ing (the present Manchu
Dynasty) 1644.

The books referred to are:—

BOOKS ON MUSIC AND CEREMONIES.

Lu Lu Ching I 當呂精義, six volumes, dated the first
day of the year ping shên of Wan Li, i.e. in 1596, and written
by one Chu 朱, a member of the Imperial family, with the
titles Tsai Yu 載靖 and Chêng Shih Tzŭ 鄭世子. It is
divided into the Inner Section, the first four volumes, and
the Outer Section, volumes five and six. The names of
sixty-eight books consulted are given besides the Twenty-one
Histories and the Thirteen Classics. The first three volumes
deal with the theory of music, giving the dimensions of the
standard pitch-pipes, the mathematical proportions of the
notes of the scale and so on. The fourth volume gives a
careful account of the ancient musical instruments with very
good drawings. In the copy used the fifth volume was
The sixth volume treats of many subjects connected with ancient music, introducing further remarks on several of the instruments and a number of tunes to songs from the *Book of Odes*. Music and musical instruments are dealt with from a purely antiquarian point of view. The book is very highly praised by Amiot, and seems indeed to treat the subject in a scientific and unbiassed way. It seems to have had but little influence on the authorized music of the present dynasty.

References to this book, unless otherwise marked, are to the leaves of the fourth volume; and the author is called by his title *Tsai Ya*, for the sake of conformity with Amiot.

A number of works by the same author are printed in a uniform edition with this. Those which have been looked at are chiefly occupied with the posture dances of different periods and for various services.

*Wén Miao Ya Shu* 文廟樂書, eight volumes, 1629. This was apparently the Music Book of the Confucian temple at Yangchow. The musical system used is nearly the same as that of the *Lù Lù Chêng I*, which is often quoted. The history, measurements, scale, etc. of each instrument are given, followed by the special notation required, and the part to be played, by each, in full. The book is remarkable for clear and simple arrangement.

*Ya Chih Lù Lù Chêng I* 御製律呂正義, five volumes, 1714. The first two volumes deal with the scales, the third and fourth give the history, measurements, etc. of the classical instruments. The fifth volume is about European music. See Additional Note B and Wylie's *Notes on Chinese Literature* (1901) p. 120.

*P'ê P'a. P'ê* 諸音譜, three volumes, 1818. See IV B. a. §§ 3 (1), below.
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 Wen Miao Ssu Tien K'ao 文廟祀典考, ten volumes, 1878. A manual of the Confucian ritual, intended apparently as a book of reference and not to be used as a service book.

 Wen Miao Ting Chi P'u 文廟丁祭譜, one volume, 1878. This is the service book used at the Confucian temple at Hangchow. See Vol. XXXIII of this Journal, Notes on the Ting-chi, etc., by the Rt. Rev. Bishop Moule.

MISCELLANEOUS WORKS.

 Ch'üeh Li Tsuan Yao 関里纂要, three volumes, 1694. This is an illustrated handbook of Ch'üeh Li or Ch'ü Fu 曲阜, the home of Confucius in Shantung. The pictures of the instruments and of the Mimes suggest that there at least the old fashions of the Ming dynasty lingered long after the foundation of Manchu rule.

 Ch'i Hsiu Lei Kao 七修類藁. The reminiscences and miscellaneous knowledge of a native of Hangchow named Lang Ying 郎瑛, who lived in the fifteenth and sixteenth centuries.

 Ts'eng Pu Shih Lei Fu T'ung Pien 增補事類賦統編, forty volumes, nineteenth century. A collection of quotations from poems arranged by subjects. It was first published as Shih Lei Fu in the Sung dynasty and has been often enlarged and reprinted.

 Tui Hsiang Tsa Tsü 對相雜字, one volume. A school book containing long lists of nouns, proper names, and so forth. Each word is accompanied with a picture.

 Ch'ên Chung Meng Hsüeh T'ang Tsü K'é Tu Shuo 澄衷蒙學堂字課圖說, eight volumes. An illustrated book prepared for the school founded at Shanghai by Ch'ên Chung (Ching Chong). It is quoted below as Tsü k'é t'u shuo. On music it is not necessarily a great authority.
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DICTIONARIES.

Erh Ya T'u 烏雅圖. A recent photo-lithograph reproduction of an edition of the Erh Ya which was re-printed early in the nineteenth century from the illustrated edition of the Sung dynasty. The Erh Ya is said to have been written c. B.C. 400, but the medieval illustrators fortunately made little or no attempt to "restore" the ancient musical instruments, and so probably show what the various things were like in the Sung period.

K'ang Hsi Tsü Tien 康熙字典, 1716, is quoted as K'ang Hsi.

EUROPEAN WORKS.

Mémoire sur la musique des Chinois, tant anciens que modernes; par M. Amiot, Missionaire à Pekin. 1776, forming the sixth volume of Mémoires concernant les Chinois. This is probably the best European work on Chinese music which exists. The author bases his work principally on the books of Tsai Yü and Li Kuang Ti. The illustrations and a great deal of the First Part (on musical instruments and the origin of Music) are taken direct from Tsai Yü. It is curious that Amiot's list of authorities is an exact copy of the list given by Tsai Yü, and excludes the Lü Lu Ching I and the book of Li Kuang Ti. The Second Part is an intricate discussion of the question whether the intervals of the scale are of different magnitudes or all the same, like those of the tempered European scale. It seems that the scale was formed of a series of twelfths which would give unequal intervals, but that at a very early date the octave was divided artificially into equal semitones. This was again forgotten at the end of the Chou dynasty, so that the Han musicians considered the transposition of tunes on instruments of fixed
pitch impossible. It is interesting to note that the Greeks used "equal temperament" in the fourth century B.C. The Persians had it in A.D. 800; and it is also found in India.

Musical Instruments in the South Kensington Museum, London, 1874, by Carl Engel. Besides the descriptive catalogue of the instruments, the book contains a history of musical instruments in general. It is quoted below as "Engel."

Chinese Music, Shanghai, 1884, by J. A. Van Aalst. Catalogue . . . . du Musée Instrumental du Conservatoire Royal de Musique de Bruxelles, par Victor-Charles Mahillon, Gand 1886, 1893. It is quoted as "Brussels Catalogue" with the number of the instrument. My indebtedness to this book will be constantly apparent in the following pages.


The Chinese Repository, Vol. VIII, contains an interesting article on some Chinese musical instruments by G. T. Lay.

The China Review for August 1882 contains an article on the Shêng by F. Warrington Eastlake.

The Journal of the North China Branch of the Royal Asiatic Society contains articles bearing on the present subject by Dr. Syles, Dr. Edkins, N. B. Dennys, G. E. Betts, and Bishop Moule.

My attention was first directed to Chinese musical instruments by my Father’s Paper on the Half-yearly Sacrifice to Confucius, printed in Vol. XXXIII of this Journal, and my interest increased by a correspondence with the Rev. F. W. Galpin which that Paper elicited. Mr. Galpin is too well known for it to be necessary to say what an advantage I have enjoyed in having his most kind and constant help in the preparation of this list. And I have to
thank him specially for having finally taken the trouble to read through and re-arrange with many valuable annotations the whole of my manuscript. Three friends to whose keen interest and wonderful fund of information I owe very much are gone beyond the reach of earthly thanks, my sister Mary, Mr. P'an Sung-chou of Hangchow, and a Pekingese gentleman named Chang who was introduced to me by Mr. W. H. C. Weippert. To Mr. Chang and to Mr. Weippert himself I owe among other things all the information embodied in Additional Note D; and to Mr. P'an, besides countless smaller debts, great help in the preparation of Additional Note F. My original design was to give an accurate description of all the existing instruments I could find, excluding all mention of their past history or present use. The addition, almost insensibly and in a very partial and irregular manner, of some remarks on the history and uses of several instruments, as well as of a few notices of instruments no longer found, has not I hope made the work less interesting. That I have been able to make such additions at all is very largely due to the kindness of the Rev. Timothy Richard in lending me his copies of the books Wên Miao Yo Shu and Lû Lû Chêng I, of Mr. Ting Hsiu-fu in allowing me to use the Wên Hsien T'ung K'ao from his great library at Hangchow, and especially of my brother H. W. Moule who gave me fifteen volumes of Tsai Yü's works including the great Lû Lû Ching I. The addition of historical notes has turned my list to some extent into a sad record of stagnation or too often of change and decay; but my work, which was chiefly done in the leisure hours of a year spent at Shanghai, will be more than repaid if it succeeds in helping towards the understanding of even an insignificant detail of Chinese life or in rousing a little even of pitying interest in this great empire of the East.
CLASS I. Sonorous Substances.

Section A. Rhythmic.

1. CHU (TCHOU) 竄. A wooden tub with the sides sloping outwards towards the top, about two feet square, and standing on a pedestal three or four inches high. It is constructed with a square frame at the top and uprights at the corners, the sides being fitted in as panels. The frame is golden bronze coloured, three of the sides are painted green and white outside, and all the inside is black. In the fourth side, which is painted grey, is a round hole, and on the inside of each of the other sides a raised disc [see Plate XII].

The Chu is only used at State services, and at the Confucian festival it stands to the north-east on the terrace in front of the Hall, with the round hole facing west. The performer stands on the east side of the instrument and strikes it with a mallet inside (on the north disc) three times before each verse of the Hymn to Confucius. The mallet, called Chih 竄, has a small green head and a red handle. Anciently it was fixed to the bottom of the Chu on a pivot, and the performer reached it apparently through the hole in the side which still survives although the mallet has been disconnected since the Sung dynasty.

1 On the worship of Confucius, see Vol. XXXIII of this Journal:—Notes on the Ting-chi, etc., by the Rt. Revd. G. E. Moule, D.D.

2 At P'ing-yin in Shantung the Chu has no side hole, nor corner uprights. It is 28 inches square at the top, 23 inches at the bottom, and 17 inches high. The pedestal is 7 inches high.
The ancient *Chu* had not the top frame or the uprights, but consisted merely of five boards of *Ch'iu*\(^1\) wood half an inch thick, and was 24 inches square at the top, 18 inches at the bottom, and 18 inches high; the hole was six inches in diameter, and the mallet had a head 10 inches long.—*Tsai Yü*, f. 77.

The form of the *Chu* is that of a grain measure; and it is said to have been used in the worship of Heaven from primeval days as an acknowledgement of the advantages which men derive from a civilized life.—*Amiot*. See also the reference to *Tsai Yü* under No. 2 below.

2. **Yü** (*IU* 敌). The figure of a couching tiger carved in wood, about 2 feet long, and lying on a wooden pedestal. On the back of the tiger is a piece of wood with twenty-eight parallel grooves cut across the top and down either side, leaving a row of teeth, *Chü Yü* 虎齒, along which a bamboo stick called *Chên* 筝 (about 16 inches long, with the upper end split into twelve divisions) is rapidly drawn three times to mark the end of the music at the Confucian services. The tiger is painted yellow with red and black markings, and the pedestal red bronze and gilt. The *Yü* stands to the north-west of the Terrace in the Temple of Confucius. The sound seems to be caused largely by the rattling together of the divisions of the stick. The *Chü Yü* were formerly like the teeth of a saw and extended all along the back of the tiger. *Tsai Yü* says that the *Yü* is made of *Ch'iu* wood, and that the stick should be of the same wood 10 inches long, 1 inch wide, and 0.1 inch thick.—*f*. 78. The use of the bamboo stick dates from the *Tang* dynasty. It is not right to hit the tiger on the head. The pedestal was originally a plain inverted box, perhaps acting as a resonator.

\(^1\) *Catalpa Kämpferi*, Giles s.v. 槐.
Amiot says that the attitude of the tiger shows the submission of all animals to man, and that the teeth were anciently tuned to give six whole tones [see Plate XII].

Tsai Yü says [f. 76] that the Chu and Yü derive their respective uses and positions from their correspondence with the two Diagrams Chên and Kên; and the Chu, as proclaiming the beginning, typifies Music, while the Yü, marking a finished act, typifies ceremony. The hammer fixed inside the Chu is called Chih to signify the calm uniformity which is characteristic of Music as naturally inborn; while the Yü is made like a tiger to signify the variety characteristic of ceremony which is artificial and external.

"The Book of Changes says *(Li [lu] suggests the idea of) one treading on the tail of a tiger, which does not bite him. There will be progress and success," and so the Yü, shaped like a tiger, is what the ancient kings took to display a warning not to forget danger in the midst of peace."

3. (1) CH'UNG TU (TCH'OUNG TOU) 春臘. A clapper formed of twelve slips of bamboo strung on a leather thong. Each slip should measure 12 inches long and 1 inch wide. They are used, tied up in a sheaf, by the

1 On this Mr. Galpin remarks: "In its earlier form therefore it was an instrument with a distinct tonality. Wooden tongue-vibrators giving a perfect scale are found amongst many Eastern and Central African tribes." The instrument is, however, put in this Section rather than in Section B, because (i) it seems possible that Amiot mis-read Tsai Yü, who says [f. 78] that in the Sung and Yüan dynasties the Yü was struck six times, (ii) the Yü for at least some centuries has been rhythmic and not tonal, and (iii) it is from a Chinese point of view inseparably connected with the Chu.

2 Legge's note to this, in Sacred Books of the East, says: "The coming scathless out of such danger further suggests the idea of 'progress and success' in the course which King Wăn [Wên] had in his mind. And according to Appendix VI, that course was 'propriety,' the observance of all the rules of courtesy [i.e. typified by the tiger]. On these, as so many stepping-stones, one may tread safely amid scenes of disorder and peril."
singers at the State services, being held in the right hand and struck against the palm of the left hand to mark the time. The words to be sung should be engraved on the slips. According to Van Aalst [p. 74] the clappers now used at the Confucian service are called Shou Pan 手版; and are made of wood, each piece being about 16 inches long, 2 inches wide at the upper, and 2.5 inches at the lower end. It seems to be uncertain whether wood was anciently used as well as bamboo or not.

The thing is interesting as preserving the form of book which was used before the invention of paper; but the use in music may also be very ancient, as it is perhaps mentioned in the Chou Li, c. B.C. 1000. Amiot says that the Ch'ung Tu holds a distinguished place amongst the representative instruments less because it produces the "wood sound" than because it recalls the invention of writing; and that it is used at the Sacrifice to Heaven, when thanks are given for the gift of writing as well as for all other benefits.

Tsai Yu, whose description is given above, does not seem to allude to the very different thing given in the Chou Li and in the Wên Hsien T'ung K'ao [v. Additional Note F] under the name Ch'ung Tu. This was a bamboo tube about 7 feet long and 5 or 6 inches thick, which was struck against the ground to beat time. Other varieties called Ying 應, and Ya 雅, seem to have been more like the Chu.

3. (2) A CLAPPER used at Tientsin. It is formed of two pieces of wood or split bamboo, each about 6 inches long and 2 or 3 inches wide. A small stick is fixed across the middle of each piece as a handle, and the ends of these handles are joined together by a hinge so that the two pieces of wood can be clapped against each other. It is used, not very commonly, by men who have nothing else in their hands
as they walk along the street. The man generally raises the clapper above his head and gives one loud clap at about every tenth step. What inquiries I was able to make only received the answer that the thing was a toy, but it seems possible that it has some further meaning or use than the mere occupation of idle hands.

3. (3) CHIEN PAN (Kien Pan) 筚板. Two slips of bamboo, each measuring 30\(\frac{3}{4}\) inches long and 4\(\frac{1}{4}\) inch wide, and having 4\(\frac{3}{4}\) inches at the top bent back. Much larger specimens may also be seen, and they are sometimes ornamented with notches cut along their edges. The Chien Pan are held up in the left hand and tapped slowly against each other by a movement of the fingers. They are used with the Ya Ku [II. A. 3.] principally by blind men, and are said to belong to the country north of the Yang-tze where they are often met with, though they may also be seen at Shanghai. Those measured were made at Hangchow, but the Ya Ku and Chien Pan are very rarely used there. In Shantung the long slips of bamboo are commonly replaced by two pieces of hard wood a foot or less in length.

Two small oval plates of iron joined together with string are sometimes used like the Chien Pan with a drum to accompany songs and recitations. —see p. 155.

3. (4) A CLAPPER made of a piece of red-wood about 8 inches long, 1 inch wide, and 6 inches thick. The lower side is cut away for about two-thirds of the length, the piece cut off being joined on again with a brass hinge so that it can be clapped against the upper part. At the end of the upper surface is a thin brass plate pierced by two brass pins with polygonal heads; and on each pin is hung a small disc of brass with five or six holes in it. This instrument was seen in the City Temple at Shanghai, used to accompany
songs in a dramatic recitation. In his right hand the performer held a thick piece of bamboo with which he would strike across the end of the clapper at frequent intervals.

4. (1) A RATTLE, similar to the above, said to be used by singing girls north of the River. It is formed seemingly of two separate pieces of wood or bamboo which are held in the left hand; and the elaborate brass discs are replaced by two cash. The piece of bamboo held in the right hand has teeth along the edge like a saw, and the vibration caused by drawing it across the edges of the other pieces makes the cash dance and jingle.

4. (2) A SISTRUM or rattle said to be used by singing girls north of the River. It is described as a bamboo pipe two or three feet long. Two narrow slits are cut in the pipe, extending nearly its whole length, and on opposite sides. Four or five bamboo pins are put through the pipe at right angles to the slits, and on each pin, inside the pipe, are hung two cash. The instrument is held in both hands, and is struck rapidly against the shoulders and other parts of the body keeping time with the song. It may occasionally be seen at Shanghai.

4. (3) LIEN HUA LO [or LAO] (LIEN HOUA LO) 錦花樂. A rattle formed of four slips of bamboo, each about 4 inches long and 1 inch wide, with a fifth piece about 7 inches long, joined together by a tape which passes through two holes near the top of each slip. Between each of the smaller slips of bamboo eight very small brass cash are threaded on the tape, four on either side. The longer piece has the top pointed and two large notches below the point on either side, and below these the holes for the tape. This piece is held in the right hand and is shaken so as to make the four smaller pieces clap against each other. Rattles of different form are said to be also called Lien Hua Lao. One
seen at Soochow had the long piece longer and the shorter pieces replaced by one quite short and broad piece of bamboo or wood. The specimen described above was used by a beggar at Shanghai, and smaller ones have been seen in Hangchow, but the rattle is said to come properly from further north and it has been met with at Chi ning and Chou ts’un in Shantung. The performer holds in his left hand bamboo castanets [I. A. 5.].

*Lien Hua Lao* is said to be the refrain of the *Lotus Song* which this instrument properly accompanies.

4. (4) NAO CHIN CHIEH (NAO KIN KIAI) 闌金街. This consists of four or five oblong iron plates joined loosely together by two strings (tied to holes in the two upper corners of each plate) so that they overlap each other when the strings are stretched out. It is the sign of itinerant knifegrinders at Shanghai, Hangchow, and occasionally at Peking. The man holds one piece of iron in his hand letting the others hang loose and swing against each other as he walks; and at frequent intervals he shakes the instrument so that the plates clap against each other in turn three or four times, and then brings them up into his hand with a jerk. The first piece, which is held in the hand, is sometimes made of wood or bamboo.

4. (5) CH’UAN LING (TCH’OUEN LING) 串鈴. A metal ring made to produce a sound by being twirled rapidly on a stick. It is one of the signs used by itinerant physicians. The professional skill of the man is said to be judged by the height at which he is able to spin his ring, very little being thought of one who cannot keep it at least level with the top of his head. A specimen seen at Shanghai was a hollow ring containing small balls and with a slit round the outside, and it was twirled on the man’s finger instead of on a stick.
Some doctors make rattles by putting loose iron discs on to the handles of the files which they use for reducing their drugs to powder. Such rattles may be seen in the City Temple at Shanghai. The file is a heavy one, with one end made thin to form a handle; on this are two thin convex discs about 3 inches in diameter, with a flat one between them thicker and rather smaller. The end of the handle is split and the two parts bent back into rings so that the discs cannot fall off. Others again put similar discs on to the middle prong of a sort of trident to form a rattle.

4. (6) Corn-cutters [修脚] at Hangchow and elsewhere put two or three brass rings on to the axis of the little leather-seated campstool which they carry with them, and use that as a rattle.

4. (7) SHOU CH'IU (CHEOU K'1OU) 手球. A pair of hollow iron balls without any opening, each containing a smaller iron ball which makes a tinkling sound when it is moved. The diameter is about 1\(\frac{1}{2}\) inch. Pao-Ting, the capital of Chih-Li Province, is noted for the manufacture of these balls, which are twisted about in the hand for the primary purpose of keeping the fingers supple. They may constantly be seen at Peking, but are not common about Shanghai.

4. (8) YEN MA (IEN MA) 畦馬, T'IEH MA (T'IE MA) 鐵馬, or YÜ K'O (IU K'O) 玉珂. These are described as being a number of small plates of metal, stone, or commonly now of glass, hung by silken threads to a wire hoop which is hung under the eaves of a summer-house. The plates make a tinkling and ringing sound as they touch one another moving in the breeze. They are also hung from the lintels of doors or windows. Yü K'o is an ancient literary name. They are mentioned as early as the eighth century.—K'ang Hsi s.v. 鐘.
4. (9) Tinkers have a number of oblong brass plates strung on two parallel pieces of wire, which are fixed to their apparatus so that the spring of the yoke by which it is carried makes the plates clash against each other. The rhythmic jingle thus caused is a characteristic sound at Hangchow, Shanghai and elsewhere. The device is [?] not used in the north.

Certain peddlars have a small iron plate which they tap with an iron bar to announce their presence. Others will clink two of their tools together for the same purpose.

4. (10) At the great annual fair at T'ai An in Shantung vast quantities of toy rattles are sold. They are generally either hollow clay figures of men or animals, or closed wooden cylinders with a handle fixed to one end. A third kind is made of two small tin plates fitted together so as to leave a small space between their edges, with a tin handle fixed through the centre. All three kinds enclose a few loose balls—probably small pellets of clay or hard dry seeds.

5. P'AI PAN (P'E PAN) 拍板. Castanets formed of three pieces of wood tied loosely together. Red-wood or box seem to be the woods most commonly used. The measurements at Shanghai are: length, 10.5 inches; width, near either end, 2.5 inches, in the middle, 2 inches. The outer surface of each of the two outer pieces is slightly convex. They are used in the theatre, being held in the left hand by the man who beats the Pang Ku [II. A. 2], and also at other musical performances, at funerals, and by beggars. The performer holds one piece of wood firmly in his hand so that a slight turn of his wrist brings it against the other two pieces which hang loosely over his thumb.
Tsai Yu [f. 50] mentions the Pan, but from his drawing and description elsewhere the thing seems in his day to have consisted of six pieces of wood. And each piece was broader at one end than at the other, and thinner at the edges than in the middle, and near the narrow end had two holes for the string. Castanets with six pieces of wood seem to be still used in some places; and there is also a small variety of which each piece is about 3.75 inches long.—Brussels Cut: 651, 652. At Peking, besides the common kind, there are smaller castanets made of three straight flat slips of wood 7 inches long and 1.5 inch wide; and also larger ones 16 inches long and 2.5 inches wide, consisting either of three pieces or of eight thin pieces with two thicker pieces at one side tied rather tightly with yellow silk cord. [see Plate XII.]

The fondness of the Chinese for audible time-beating is very characteristic, and from these common castanets is derived, perhaps, one name for musical time—Pan yen. Pan stands for a 'bar', and also for the accented beat in a bar. Time is described as 'one pan one yen' or 'one pan three yen', quick time is called chin pan, slow time man pan 慢板, and so forth.

Castanets made of two thick pieces of split bamboo joined together by a string are seen in strolling bands at Shanghai, and are used by certain pedlars and by beggars.

6. WOOD-DRUMS. (1) PANG TZU (PANG TZIU) 柰子. This consists of two pieces of red-wood measuring, at Shanghai, about 7.25 inches in length. One piece is 1.25 inch wide and 1 inch thick, flat below and rounded above. This is held over the hollow palm of the left hand and is struck with the second piece, which is round—

1 Ling Hsing hsiao wu p'u 露星小舞譜 f. 5.
measuring 0.75 to 0.875 inch in diameter. For the accompaniment of certain tunes both in the theatre and at private performances, the Pang tsu takes the place of the Pang Ku and P'ai Pan, and is used with the smaller Ti [III. A. b.] and Hu Hu [IV. B. c. §§]. The tunes in question are known as Pang tsu Tiao.

A similar thing, with the larger piece of wood replaced by a piece of split bamboo, is used by hawkers of sweetmeats.

6. (2) A short stick held in the left hand and struck on the end with a slip of wood about 2 inches wide and 0.25 inch thick. This has been seen used by a fortune-teller at Chi-ning-chow in Shantung. A beggar in the same town was observed with a similar instrument, only the stick was heavier and the slip of wood was shaped something like a spade.

6. (3) HSIANG CH'IH (HIAHNG TCH'EU) 鼓尺.
This is a piece of red-wood about 2 feet long with a cord passed through a hole in the middle of it. It is struck with a short stick. A pair precedes the coffin at funerals in Peking. The gentle irregular tapping of the Hsiang Ch'ih has a most weird effect.

At funerals in Hangchow a large slip of wood or bamboo is carried in the procession and beaten with a regular rapid stroke.

6. (4) PANG (PANG) 椫. A tube of bamboo 15 to 25 inches long and 3 or 4 inches thick. It is closed at each end by a knot of the bamboo, and has a slit cut in one side extending nearly the whole length. It is beaten with a wooden stick. It is used by night-watchmen at Hangchow and [?] many other places, and also by itinerant cooks who hang it to their apparatus so that they can beat it as they walk. It does not seem to be common north of the Yang-tze.
6. (5) PANG (PANG) or T'O (TOUO) 标. A wood-drum used by watchmen in Peking and elsewhere. It is a piece of wood 9.75 inches long, 4.25 inches high, 1.875 inch thick at the bottom and 0.875 inch at the top—the sides slightly convex. In the top is a slit about 7.5 inches long and 0.5 inch wide from which the block of wood is hollowed out to a depth of about 3.5 inches, the sides being left about 0.2 and 0.25 inch thick respectively. The thing is very roughly made, and the measurements of different specimens vary considerably. One much smaller and a little different in arrangement is described in the Brussels Catalogue, 649. Specimens about 30 inches long are used in the guard rooms at the Gates of Peking. A small one may be seen at Shanghai used by a street cook, and the instrument is not unknown at Soochow. A long narrow specimen has been observed at Chou-ts'un, but elsewhere in Shantung the variety with a handle seems to be preferred. A straight piece of hardwood is used for the stick. [see Plate XII.]

6. (6) PANG. An instrument differing from the above chiefly in having a handle fastened into the under side. It is very common in western Shantung where it is called Pang-tzu and is the sign of vendors of bean-curd. It is often made of mulberry wood. A variety seen in Peking had the handle fixed to the thinner edge and was shaped and hollowed¹ just like the Mu Yü [6. (8) below], except that the ends were cut off straight instead of being rounded, and there was no carving.

6. (7) YÜ PANG (IU PANG) 魚 桶. A piece of wood carved to represent a fish, with a slit along the back from which the body is hollowed out. The mouth is also

¹ That is the slit is carried the whole length of the instrument and returned down the ends, finishing about the middle of either end in a round hole through which the hollowing is chiefly done.
hollow, a ball of wood being left inside which is loose but too large to come out. It is often found hung horizontally in the cloisters of Buddhist monasteries—for instance, at the Ling Yin Ssu near Hangchow. At this monastery it is said to be struck before the Tien tzü [I. B. I (2)] to announce the meal hours. At the Chao Ch'ing Lu Ssu at Hangchow the fish [about 7 feet long] and the iron Tien tzü hang side by side in the cloister outside the refectory. A small specimen in a Taoist temple near Shanghai measures about 3 feet in length. The Yü Pang is also used in the offices of certain officials. Specimens differing slightly in form from those in the temples may be seen outside the guard rooms at city gates.

This instrument is said to be the true Wooden Fish, the thing now so called representing perhaps only the head of a fish. In general appearance it is not unlike the Teponaztli of the Aztecs [Engel p. 77], but it is more simple than that in construction.

6. (8) MU YÜ (MOU IU) 木魚. The Wooden Fish. This is a block of camphor wood, wedge-shaped and partly hollow, and with the thick part rounded on the outside. The thin edge is ornamented with carving, and in the middle of it is a loose ball in a cavity from which it cannot fall out. The whole is usually painted scarlet with the carved work gilded. It is struck with a heavy wooden stick with a pointed knob. The thing is laid on a special stand, or on a cushion on a table; or when small it is carried in the hand; but it is rarely hung up. The width varies from 1 inch to about 3 feet. It is used constantly by Taoist and Buddhist priests at services both in the Temples and in private houses, and when they are collecting alms; and the small sizes are used also by pilgrims. The fish, with no eyelids, is a symbol of wakeful attention, and so the wooden fish is used at prayers. A fish
of T'ung wood is mentioned by Huai Nan Tzu, a famous philosopher of the second century B.C., as used when praying for rain in the Autumn. [see Plates VII, fig. 1, and XII.]

6. (9) AO YÜ (NGAO IU) 魚. An instrument only distinguished from the last by being wider in proportion to its length and thickness. Very large or very small specimens are rarely seen at Hangchow or Shanghai; the ordinary width is about 10 or 12 inches. It is specially used by Taoists. The Ao is a "certain sea-monster said to carry the P'ēng Lai mountain on its back; this mountain is the abode of the Hsien, Genii. The Ao sustains the pillars of heaven. Ao T'ou, the Ao's head, is an ornament on the outside of the roofs of Chinese temples. Tu chan Ao T'ou [to stand alone on the Ao's head]—to attain the highest degree of literary rank" [Morrison's Dictionary s.v. Ngaou].

The making of Wooden Fish is a separate craft, and the shops where they are made and sold contain, as a rule, very little else.

6. (10) HSÜ PAN (SIU PAN) 序板. A board measuring about 30 inches by 18 inches and 2 inches thick. One hangs in the cloisters of the Ling Yin Monastery near Hangchow, and is said to be used as a curfew—being struck about eight o'clock in the evening—and also to summon the monks to extraordinary meetings. The two upper corners of the board are cut off. It is hung by a cord passed through a hole near the upper edge.

7. HUAN T'OU (HOUAN T'EOU) 喚頭. An instrument used by itinerant barbers at Peking and elsewhere. It consists of two curved claws of iron, joined together at their thick ends, with the points just touching each other. A short bar of iron is put between the claws and pulled
rapidly out between their points, causing them to vibrate violently and produce a loud ringing sound. The length is about 13 inches. [see Plate XII.]

8. (1) PO (POUO) 銅. Brass cymbals joined together by a long string put through a hole in the centre of each. The size varies considerably. They are perhaps universally used in theatres and by priests, as well as at the performances which take place in private houses at the New Year. Large cymbals are used by the priests of the great Lama temple at Peking [III. C. 2 (4)]. A pair about 24 inches in diameter and producing an astonishingly loud sound, have been seen attached to the Lo-Ku-T'ing [II. A. 2 (2)], at Shanghai. [see Plate VII, fig. 2.]

There seems to be some uncertainty about the names used to distinguish the different varieties. At Hangchow the larger ones are said to be called Nao Po 銅銅 or Ta Po 大銅, the smaller, Ch'a Po 岐銅 [at Peking, Hsiao Ch'a érh]. Others say that Nao are small cymbals formed of simple convex plates without the flat rim of the Po. At a shop in Peking the larger were called Ta Ch'a, the smaller Nao. Nao seems also to mean a kind of bell used in the army, and to be used for brass instruments as opposed to drums—[Morrison s.v.]. Small toy cymbals, called at Hangchow P'in p'in ch'a, are very common.

Dennys says that “the smaller kinds were invented by Mu Shih-so, in the after T'ang dynasty [A.D. 923—936]. The larger sort were first brought from India”; and elsewhere that but slight mention is made of gongs and cymbals by the old writers.

It is said that at Soochow cymbals are made to ‘fly’, meaning perhaps some trick of throwing them up so that they clash in the air. Cymbals so used are called Fei Po 飛銅.
8. (2) HSING ĖRH (HING EUL) 星兒. A pair of hemispherical or conical bells without tongues, struck against each other. Each has a hole in the centre through which a string is passed. They are said to be used by priests. They are not common about Shanghai, but may be seen at Hangchow and at Peking. A pair at Peking, 2½ inches in diameter, were shaped more like cymbals, but made of thicker metal. They are called also P‘èng Chung 撞鑼. The Indian Munjeera [Engel p. 171] seems to be the same instrument. [see Plate XII.]

9. A toy very common at Hangchow. It is formed of a cardboard body like a deep pill box. A short string attached to a little stick passes through a hole in the bottom of the box and is kept from slipping out by being tied to a cross-bar rather shorter than the diameter of the box. When the box is twirled round the stick it also revolves on the string and the friction of the cross-bar inside produces a very loud harsh noise.

Section B. Tonal.

1. (1) T’IEH PAN (T’IE PAN) 鐘板, or T’IEH P‘AI 鐘牌. A piece of iron about 1 foot long and 2 inches wide, thicker and broader in the middle than at the ends and slightly curved both in its length and breadth. It is used by blind fortunetellers, who give it four or five rapid strokes with a short iron bar, which they then allow to lie loosely against the end of the instrument so that the vibration makes it rattle. It will produce two different notes. It may be seen at Hangchow, Shanghai and elsewhere.

1. (2) TIEN TZÜ (TIEN TZEU) 點子. A gong of elaborate ornamental outline cast of iron or brass and hung in a wooden frame. It is seen at city gates and in temples, and also at Yamên gates, where it is struck when the magistrate
passes in or out. An iron one in a temple near Peking has a
date of the sixteenth century. A good modern brass gong,
about 4 feet in diameter, hangs near the refectory at the
Ling Yin Monastery and is used to call the monks to meals.
The size varies from about 1 to 4 feet in width or diameter.
The shape is difficult to describe. The whole would generally
fit, roughly, into a circle. In the upper half there are two deep
indentations leaving between them a sort of peninsula, which
forms the head [generally foliated] by which the gong is hung.
The remainder of the outline [more than a semicircle] is more
or less indented or foliated in the manner of the conventional
Chinese representation of a cloud. The surface of the gong
has generally some ornament and an inscription, both in relief.¹

Each watch of the night [kêng] is divided into five tien.
Soldiers on guard are supposed to sound the watches on a
drum, and the tien on a Tien tsüz.

1. (3) LO (LO) 鐘. A circular brass gong. The
larger specimens used in processions are sometimes made like
a plate with the outer edge of the rim turned over, others are
merely a slightly convex disc with the edges turned over. It
is used in the processions of Mandarins and at funerals, and
for various domestic purposes, as well as by watchmen and
pedlars, and on the stage. In a procession there are usually
a pair of the largest size each hung to the end of a small beam
which the performer puts on his shoulder with a couple of
bricks tied to the other end to counterbalance the gong. The
surface of the large gongs is often polished in one or two
concentric zones, the intervening spaces being left dull.
The diameter varies from a few inches to 2 feet or more.
There is a variety with a deep depression in the centre, and
the two kinds are said to be distinguished as yin and yang, but
this distinction is at least not universally known. Gongs of
this sort are beaten with a wooden stick with a head of plaited.
string or rags, sometimes covered with cloth or leather. Their use is perhaps universal. The best gongs are said to be made at Soochow. The metal is called huang t'ung 鷹銅, sounding brass, and is said to be composed of copper and zinc with perhaps five per cent of tin. The ordinary gongs are said, at Hangchow, to be hammered when the metal is red hot, and not cast as has been sometimes stated. [see Plate VII, fig. 4.]

1. (4) TANG TZŪ (TANG TZEU) 鐘子. A flat brass gong about 1 foot in diameter, with the rim 2 inches wide turned over at right angles. It is hung to the roof of the Loku'ting [see II. A. 2 (2)] at Shanghai, where the name seems to be doubtful. At Hangchow it is called Tang tang tzū, and is said to be invariably used at Buddhist services. Taoist priests use it also, beating it more rapidly than the Buddhists do. The name Tang tzū is applied to smaller gongs of this shape used in processions at Peking, and also to a slightly different gong there, which is said to be used by priests and is hung from an horizontal arm fixed into an upright, which the performer holds in his hand. Both upright and arm are usually turned, and painted red; the gong is attached to the former by one and to the latter by two strings.

1. (5) CHIN KU (KIN KOU) 金鼓. A circular brass gong about 14 inches in diameter, with the rim curved over. There is a raised boss in the centre and a depression carried round near the edge. The sound has very little ring in it. At Hangchow it is called Tang Lo. It is said to accompany the bride’s sedan in wedding processions. At Peking it is called T‘ung Ku 銅鼓. A smaller gong of something the same pattern is used in processions at Peking and called Tien erh 黑兒. [see Plate VII, fig. 3.]—see p. 155

1. (6) PAO CHÜN CHIH (PAO KIÜN TCHEU) 報君知. “To let gentlemen know.” A circular brass gong, 4 to 6 inches in diameter and nearly flat. It is hung.
by two strings to a light bar, to the middle of which is fastened a small wooden hammer. It is used at Hangchow and elsewhere by blind men when walking along the streets. It is rarely seen at Peking or at Shanghai. The gong used for this purpose in Shantung, and called Hsuan tzü, is like a cymbal, with a raised boss at the centre. A larger flat gong, hung and struck in the same way, is used at Soochow by pedlars. [see Plate VII, fig. 5.]

1. (7) TANG LO (TANG LO) 鐘鑼. A brass gong about 8 inches in diameter. The surface is flat, the edges turned up and finished with a narrow flat rim. It is fastened at three points to a wire ring which is fixed into a wooden upright with a broad base. It is used, standing on a table or held in the left hand, by Buddhist and Taoist priests, and is struck with a small wooden or bamboo hammer.

1. (8) LING TZÜ (LING TZEU) 鈴子. The Peking name for a pedlar's gong\(^1\) similar to, but usually smaller than, the above. The gong is hung by three or four strings in a wire ring which is fixed to the end of a wooden handle. To the ring one or two beads [or hard pads of cloth] are hung by a leather lace and horn ring, so arranged as to hit the middle of the gong when the instrument is twirled. It is used by sellers of thread at Peking and elsewhere. The wire ring is larger in proportion to the gong at Peking than in other places.

At Hangchow a similar gong, 4 or 5 inches in diameter, with the beads tied to holes in its edge, is attached directly to the wooden handle instead of being hung in a ring.

At Peking itinerant menders of crockery hang a small gong to their apparatus, and on either side of the gong a small iron hammer with brass head is hung by a chain from a

\(^1\) Called Tang 鐘 in Tui hsüang tsü tzü.
sort of brass outrigger, so as to hit the gong as it swings with the man's walk. This arrangement is also seen in other parts of Chih li and in Shantung.

1. (9) T'I TANG (T'I TANG) 提鑼. A brass gong shaped like a shallow bowl, about 4½ inches in diameter and 1½ inches deep. The metal is much thicker than that of most other gongs. It is carried by a loop of string passed through two small holes in the rim, and is struck with a slip of wood about 7 inches long and 2 inches wide called Lo pan 鍼板. It is used sometimes in funeral processions in Shanghai [II. A. 2. (2)] where it is played by one of a band of small boys, and in Peking; and its pathetic note is also the well known sign of sweetmeat sellers from north of the river. The name is not certain.

1. (10) HSIANG PAN (HIANG PAN) 鼓板. A thick oblong plate of brass about 16 inches long and 10 inches high with the two top corners cut off and with a string loop attached to a hole [or two holes] near the upper edge. It is struck with a long stick. It has been seen in use [? by some pedlar] in the streets at Hangchow, but is said, at the shops there, to be used by Buddhist priests.

1. (11) YÜN LO (JÜN LO) 韻鑼. A vertical wooden frame standing on a carved base. The framework is so constructed as to form ten square spaces arranged in three vertical rows, two with three squares each, and the middle row containing four squares. In each space is hung a circular plate. The ten plates have all the same diameter, but vary in thickness so that they give different notes. The plates are struck with a light hammer with an ivory head. The instrument is said to be chiefly used by Buddhist priests, and also by the bands which give performances in private houses. The scale is:

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\[\text{Scale Diagram}\]
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The total height is about 30 inches, the width 18 inches, and the diameter of each plate 3.74 inches.

The above description is taken chiefly from the Brussels Catalogue, 661. M. Mahillon adds the statement that the number of vibrations of plates of the same substance and shape varies as the thickness of the plates and in inverse ratio to their surface. The same rules seem to apply to bells also; and the application of the two rules together produces the rule that the vibrations of [similar] bells vary inversely as the cube roots of their weights [Brussels Cat. 667].

The Yün Lo is very common at Peking where it is used in processions; but is rarely seen about Shanghai.

2. (1) TÊ CH'ING (TÊ K'ING) 特磬. A slab of sonorous stone. It is used at the Confucian Services, hanging at the west side of the terrace opposite to the Po Chung. The frame in which it hangs is like that of the Po Chung except that it is supported on the backs of white ducks instead of tigers. It is struck at the close of each line of the Hymn to Confucius, and like the Po Chung is tuned to the key note appropriate to the season. The one used at Hangchow for the Spring service and tuned to Chia chung is shown at Plate I, fig. 1. The average thickness is 17.5 sixteenths of an inch.

The stone is of a blackish colour with white veins. Wen Miao Yo Shu does not give this instrument, so that it possibly was not used in the Ming Dynasty.

2. (2) PIEN CH'ING (PIEN K'ING) 編磬. A set of sixteen stones of the same shape as the above. They stand in the Confucian temple at the front of the terrace and to the west, and correspond in all respects to the Pien Chung.
The *Pien Chung* and *Pien Ch'ing* both play the tune at the Confucian Service, but the bell is struck at the beginning of each long note and the *Ch'ing* at the end.

The set at Hangchow are not, as a fact, in tune with the bells. The stones are all of the same superficial size but differ in thickness. The thickness of each piece [in sixteenths of an inch] at a given angle is shown below:

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<td>A sharp</td>
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<td>14</td>
<td>F sharp</td>
<td>15.5</td>
<td>A sharp</td>
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</tr>
<tr>
<td>B</td>
<td>11</td>
<td>D sharp</td>
<td>14.5</td>
<td>G</td>
<td>16</td>
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<td>22</td>
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<td>C</td>
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<td>G sharp</td>
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<tr>
<td>C sharp</td>
<td>15</td>
<td>F</td>
<td>16</td>
<td>A</td>
<td>22</td>
<td>C sharp</td>
<td>26</td>
</tr>
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The thickness of each piece is intended to be uniform but they have all been rubbed down in parts in the process of being tuned. The sides of the stones are decorated with gilt clouds and dragons, and on the edges of each are the date [at Hangchow, 1870], the name of the place and the note, all in gilt letters. [Plates I, fig. 1, a. and XII.]

The present system of tuning the *Ch'ing* by their thickness alone dates from the Sung Dynasty; *Tsai Yu*’s rule for both bells and *Ch'ing* is to take the length of the pipe for any given note of the scale as the unit of measurement in making the bell or *Ch'ing* of the same note; the nominal measurements of every piece are thus the same, but 'inch,' 'fen,' etc. mean the 10th, or 100th, part of the length of the pipe giving the note in question. He supports his view that this was the ancient method by the fact that a set of Chou Dynasty *Ch'ing* discovered in Shansi at the end of the twelfth century varied in size from 5 to 30 inches [p. 62]. Plate I, fig. 2 shows the ancient *Huang-chung Ch'ing* after *Tsai Yu*. *Tsai Yu* does not give the shape of the Ming Dynasty *Ch'ing*; *Wen Miao Yo Shu* shows them rectangular, but a drawing of the kind
cannot be taken as a proof. The illustrated redni Ya shows the single Ch'ing of a shape which is fairly common in curiosity shops, with the two arms equal and the lower angles rounded off. A specimen of uncertain date is shown at Plate I, fig. 3. It was discovered at Shao Hsing in 1899 and is now built into a wall there. It is said to be a sham. The use of sham or dummy Ch'ing is mentioned by Tsai Yü who says that T'ai Hu stone—a dark blue lime-stone with white veins—was commonly employed for the purpose. The proper stone to use then, as now, was a blackish stone with thin white veins obtained at Ling-Pi (靈璧) in An Hui. Various kinds of jade were anciently used to make the Ch'ing. Amiot has a long article on sonorous stone. He says that true jade is agate, and mentions the allusion to metallic sounding stone in Pliny. The Aztecs had instruments made of a very resonant stone, but they were quite unlike the Chinese in shape [Engel p. 81].

Pieces of sonorous stone are also cut into various fantastic shapes. They are used as ornaments or curiosities and not in musical performances. One procured at Hangchow was in the shape of a narrow leaf about one foot long. A second from the same place was carved to represent clouds and would be called Yin Pan 雲板. It was about 18 inches high and 17 inches wide. There were five deep incisions in its edges, and the divisions so formed gave notes of different pitch. The stone is reddish brown and looks like coarse-grained wood. Others are made of half-transparent green or white ‘jade,’ and of other stones. They differ from the proper Ch'ing, among other points, in often having the surface of the stone more or less carved. There seems to be no general name for these ornamental stones.

Good specimens of sonorous stone exist at Chü-fu, the home of Confucius in Shantung. They are not musical
instruments, but are built into a balustrade or put to other uses as ordinary stones. These stones are a kind of limestone and come from a quarry not far from the city.

The earliest mention of stone gongs by a European writer is perhaps in Trigault's *De Christiana Expeditione* [p. 369], in what may be Ricci's own account of the Confucian orchestra as he saw it at Nankin at the close of the sixteenth century:—ij . . . ad pulsanda quilibet instrumenta se accinxerunt: è quibus erant ex ære campano tintinnabula, pelues, alia è saxo, è pelle quædam velut tympana, è fidibus nonnulla, tibie inflabatur, & organa quædam, in quæ ventus non follibus, sed ore insufflatur: quædam alia brutorum figuram referebant, & bacillis in eorum dentes adactis, ex inani ventre sonum reddabant. hæc simul omnia pulsabantur, eo concentu, quem fingere sibi quisq; potest.

3. (1) CH‘ING (K‘ING)磬. A brass bowl which at Buddhist services sometimes stands on a cushion on a table in front of the principal shrine. It is struck with a straight round stick. A small specimen at Hangchow measures about 7.5 inches in diameter and 3.25 inches deep; and the metal is 0.125 inch or more thick. They are perhaps generally deeper than this in proportion, and 10 or 12 inches in diameter. Cast iron or brass Ch‘ing of various sizes with inscriptions and ornament in high relief are also common. The small plain variety is said to be hammered and not cast. The Ch‘ing is often seen in Taoist temples also; there is a large one, for instance, in the Tai Miao at T‘ai An in Shantung.

A fine specimen, of brass or white copper, about 30 inches in diameter covered with inscription and ornament, may be seen at the Chao Ch‘ing monastery at Hangchow.
It stands to the east close in front of the chief shrine of the temporary Large Hall. The stick is about 1 foot long and perhaps 2 inches thick; the handle, which is thinner, having red string plaited round it. This large monastery, one of the most flourishing about Hangchow, may perhaps be taken as a typical instance of a Buddhist establishment. East of the shrine is a Wooden Fish, about 30 inches wide, on a square wooden stand. The two heavy sticks [each about 3 feet long] with which it is beaten are placed in two hollow bamboos tied to the front of the stand. Before the shrine are twelve tables on which are laid vestments, incense and other things wanted for the services. On three of these tables [along the front of the Hall] are musical instruments:—On the first, a pair of cymbals and two small Wooden Fish of different sizes; on the second, a small Ch‘ing of beaten brass, a Yin Ch‘ing and a gong [Tang Lo I. B. 1. (7)]—the last with a very light springy bamboo hammer, the head of which is formed by leaving part of the bamboo thick while the rest is cut away very thin; and on the third table a hand drum [II. A. 5. (1)]. To the east of this last table stands a large drum [T‘ang Ku II. A. 6.] over which is hung on a curved piece of wood a small plain brass bell. High up in the south-west corner of the Hall is a yet larger drum lying on its side in a wooden chamber, and in a similar situation, in the south-east, hangs a bell. In the great Hall at the back, built for a famous bronze statue of Buddha, is another large T‘ang Ku; and high under the eaves hangs a small bell. In the cloister close by lies an old cracked bell of rather unusual shape and ornament. It is about 4 feet 6 inches high and 3 feet in diameter, and the metal is 4 inches thick at the mouth. Wind-bells are hung from the corners of the temple roofs. For a description of the Fish and Tien Tzü, see I. A. 6. (7) and I. B. 1. (2).
3. (2) YIN CH’ING (IN K’ING) 音磬 or CHI (KI) 鼙 [Tui hsiang tsai tzū]. A brass hemispherical bell without a clapper, 2 or 3 inches in diameter. It is fixed by a string or nail put through a hole in its centre to a wooden or bamboo handle about 10 inches long. There is sometimes a pad of cloth between the bell and the top of the handle. It is used by Buddhist priests at Hangchow, being held mouth upwards and struck with a light iron rod which is tied to the handle. The bell is sometimes cased in a lotus flower made of red, blue and white cloth. The best Yin Ch’ing are said to be made at T’ien T’ai, and specimens from that place seem to be superior to others in tone and in finish. The bell is fixed to the handle with a brass pin and rests on a small brass lotus flower. The rod with which it is struck is of brass with a slightly swelling iron head welded on. [see Plate XII.]

4. (1) CHUNG (TCHOUNG) 鐅¹. This is the general name of bells without clappers. The common form is circular with a dome-shaped crown, the diameter of the mouth being not much greater than that of the crown, and there is usually a round hole in the middle of the crown. The lower edge or mouth of the bell is generally waved or scollopéd.² The bell is hung by cannons, which in smaller specimens generally take the form of a dragon attached to the crown by its four feet, in a cage which is as a rule moveable, though in the northern provinces the monasteries often have a tower or a small stone pavilion for their principal bell instead of the movable wooden cage. Such bells are hung so as to swing slightly when they are struck, but perhaps never in any way that resembles the hanging of Church bells in England.

¹ Tsai Yü always writes 鐅.
² In Shantung this is done to a ridiculous extent, the indentations reaching sometimes halfway up the bell.
Small bells are generally made of brass, larger ones of brass or other alloys of copper, or commonly of iron. Bell metal according to the Chou Li [Tsai Yu f. 53] should consist of 6 parts of copper 赤金 and 1 of tin 銅, and it may be inferred from Van Aalst [p. 52] that this rule is still sometimes followed more or less. These proportions are very different from those used in England, where the old bell founders used 3 pounds of copper to 1 pound of tin with sometimes a little more tin or antimony—addition of tin making the metal more brittle. The metal of the Westminster bells is composed of 22 parts of copper to 7 of tin, and 13 to 4 is the proportion of copper to tin recommended by Lord Grimthorpe. Chinese bell founders early in the seventeenth century used 4 parts of copper to 1 of 'Ling An tin'—Wên Miao Yo Shu, III f. 7; and in the eighteenth century, copper 63 parts; zinc¹ 27 parts; lead² 10 parts—Lü Lü Chêng I, IV f. 41. From information obtained at a foundry at Hangchow it seems that when bells are cast of brass [or bronze] the metal is now usually got by melting down other brass things; but if new metal is to be used it is made of 75 parts of copper to 25 of zinc [ch'ien 錫]. The addition of tin [hsi 銅] improves the tone but makes the metal so brittle that not more than 2 or 3 parts in 100 are added.

The height of these bells varies from a few inches to about 14 feet—the height of the Great Bell near Peking. The bells in Confucian and Buddhist Temples are generally from 2 to 5 feet high. The Great Bell was cast in the years of

¹ 倧. Zinc is still known by this name, Wo yüan, in parts of Shantung.
² 錫. The Hangchow founders distinguish lead and zinc as black and white ch'ien.
Yung-Lo, that is at the beginning of the fifteenth century. The diameter of the mouth is between 9 and 10 feet, and the metal there is about 8 inches thick. The weight has been estimated at 53 tons. There is a large hole in the crown. Outside, the surface is divided into seven horizontal bands. On the east side is the date, and on the west a raised disc on which the bell is struck. The cannons and hanging gear are covered with Sanskrit characters; there are several concentric circles of the same on the crown, a row round the outer border of the lower edge and a few more in other parts; the rest of the bell, inside and out, is covered with extracts from the Buddhist classics in Chinese, containing probably not less than a 160,000 words. All the characters are in sharp high relief. The bell is only rung while the Emperor prays for rain; it is struck with the end of a heavy beam hung horizontally so that it can be swung against the disc mentioned above. The sound is very good in quality and deep. Every note of the scale sung under the bell by an English visitor was repeated very softly by echo, and certain notes seemed to make it ring. The bell is hung on a timber frame standing in a small square hall at the back of a Buddhist Monastery, and an altar with censer and candlesticks is placed before it.

The difference between Chinese and European bells is well shown by a comparison of the above measurements with those of the great bell at Moscow, as given by Engel [p. 127]: "Its weight is 443,772 pounds [about 198 tons—this suggests that the weight of the Peking bell has been over-estimated], its height, 21 feet 4 inches; its diameter, 22 feet 5 inches; and its thickness, 23 inches. It was cast in the year 1653." M. Mahillon points out that the comparatively poor and weak sound of Chinese and Japanese bells is due to the thinness of the metal [Brussels Catalogue, 667].
Another very large bell is said to hang in the Bell Tower at Peking, and to be used to strike the watches of the night and as an alarm bell. And a third used formerly to be at Nankin, lying on its side half-buried in the ground. The part above ground afforded lodging to beggars.

The connexion of bells of various kinds with religious services seems to be at least as close in China as it is in Europe, and it is interesting to note that the ceremony of baptizing bells which dates from the eighth century has had its counterpart in China. We read: "The King [Hsüan of Ch'i] asked, Where is the ox going? The man replied, We are going to consecrate a bell with its blood."—Legge's Chinese Classics, Mencius Bk I. Pt I. Cap 7, 4.

Bells of the form described are, perhaps comparatively modern. They are found in Buddhist and Taoist temples. In Confucian temples one hangs in the principal hall or, more correctly, at the Ta Ch'êng Gate. This Confucian bell is perhaps properly called Yung 鈴, and it is tolled for several minutes at the beginning and end of the services. Wên Miao Sû Tien K'ao [Sect. VI f. 7] says that a Yung Chung existed at Ch'üeh Li in Shantung, but that the state music only required the Po Chung [see below], and so the use of such a bell at Hangchow may be a recent revival, or perhaps a local survival, of an old custom. The name Yung occurs in the Book of History and in the Book of Odes, and is explained as meaning a large bell by both the Ėrh Ya and the Shuo Wên—K'ang Hsi s.v. The bell in the Soochow Fu temple

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1 An iron bell, perhaps 7 feet high and 4 feet 6 inches in diameter, which is in constant use in a temple (鳳林寺) near Hangchow is said to date from the Tang dynasty. The earliest dated bell I have noticed is a small iron one in T'ai An of the year 1303. The earliest bell date in Europe seems to be 1202, and in England 1296 [A Book about Bells p. 45].
stands at the west of the Ta Ch'êng Gate. The body of it is decorated with large separate leaves in high relief and round the edge are the eight Diagrams.

In Buddhist monasteries in the north, and in the chief Confucian temple at Peking [Van Aalst], the large bell and drum have each a small tower in one of the front courts, the bell usually being on the east and the drum on the west side.

Bells without clappers are perhaps peculiar to Eastern Asia.

4. (2) PO CHUNG (POUO TCHOUNG) 鐘 鈴. A bell of pointed oval section with a flat crown to which a round handle is fixed: low down on the handle is a ring by which the bell is hung to a large ornamental frame. The uprights of the frame stand on the backs of two carved tigers, and it is surmounted by a long-legged hawk. This bell is used at the Confucian services, standing on the east side of the terrace, and it is struck once before each line of the Hymn to Confucius. The body of the bell is divided into two parts, the upper part being adorned with thirty-six bosses in four groups of nine. Modern specimens have smaller bosses on the lower half also, which in the old bells was left plain.

Each Confucian Temple is supposed to have two Po Chung, one tuned to F for the spring service, and the other to B for the Autumn. The use of this bell is a revival of ancient usage. At one period a round Po Chung may have been used [Van Aalst], and it seems possible that no single bell was used in the Confucian worship at the beginning of this dynasty or at the end of the Ming dynasty, though little evidence has been found to show when they fell into disuse. The revival may possibly date from the discovery of an ancient specimen in Kiangsi in the year 1759 [Wên Miao Ssū Tien K'ao, § VI].
The illustration [Plate II, fig. 1] is taken from Tsai Yu [f. 53], who in his turn took it from the Po Ku T'u, published in the reign of Hsuan Ho [A.D. 1119—1126]. On f. 55 he says that many ancient bells were dug up in the Sung dynasty and were accurately described in the Po Ku T'u and that bells of three sizes, dating from the Chou dynasty, which he had himself seen, corresponded with those in that book.

The T'ê Chung 特鍾 was a bell of the same kind, smaller than the Po Chung and larger than the Pien Chung. The use of it is not required by the modern state ritual.

4. (3) PIEN CHUNG (PIEN TCHOUNG) 雕鐘. A set of 16 bells hung in two rows of eight, one row above the other, on a frame like that of the Po Chung. They are tuned to the twelve notes of a complete octave and the four top notes of the octave below, and are used at the Confucian services, where they lead the orchestra. All the bells are externally of the same size and differ only in the thickness of the metal; they are barrel-shaped, with a flat crown to which is fixed a sort of loop of metal for a handle—see Plate II, fig. 2. At Hangchow the bells are decorated with dragons in relief, and have engraved inscriptions giving the date, note, and so forth; but the decoration ought apparently to consist of the Eight Diagrams. This pattern is said by Van Aalst to date from the reign of K'ang Hsi [A.D. 1662—1722] and is shown in Lû Lû Chêng I, of that date. The measurements in that book are:—height 9.5 inches; diameter, at the top 6.5 inches; in the middle, 9 inches; at the mouth, 6.375 inches; the metal is about 0.2 inch thick for the middle huang chung note and twice as thick for huang chung an octave higher. In the Brussels Catalogue, 667, M. Mahillon gives the rule for finding the relative weights of bells required to produce certain notes, with the result that a
bell giving the note C will be twice as heavy as one giving the third, and eight times as heavy as one giving the octave above C. Tsai Yu attains the same result by making each dimension of the C bell double the corresponding dimension of the bell giving the octave. Lü Li Chêng I gives the following:

<table>
<thead>
<tr>
<th>Note</th>
<th>Weight</th>
<th>Thickness of Metal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huang chung</td>
<td>216 oz.</td>
<td>0.1598 inch (Chinese)</td>
</tr>
<tr>
<td>Huang chung (octave higher)</td>
<td>432 oz.</td>
<td>0.3196</td>
</tr>
</tbody>
</table>

thus applying another rule which has been quoted above [1. B. 1. (11)] from M. Mahillon. But the octaves of the other notes are found apparently on quite another principle!

Anciently the Pien Chung were of the same shape as the Po chung, and continued so down to the end of the Tang dynasty [A.D. 900]. The first alterations were made in the Sung dynasty, when the ring at the side of the handle was moved to the top so that the bell hung straight instead of obliquely—Tsai Yu f. 48. A bell answering to this description is shown at Plate II, Fig. 3. The drawing was made from a specimen in a curiosity shop at Shanghai. The handle seemed to be solid: on the inside were four vertical raised ribs, two on either side: the metal was thin.

The ancient bells differed in size according to their note, and it does not seem to be certain when the plan of making them all of the same apparent size was first introduced, but it was certainly before the end of the Ming Dynasty. Tsai Yu [f. 48] says that the then modern bells were "round like an earthenware jar" and all the same size; and Wên Miao Yo Shu shows the sixteen all of one size,—straight-sided round bells with convex crowns1, and each one

1 The section of a bell of this shape from the Confucian Temple of T'ai Ts'ang in Kiangsu is given on Plate II, Fig. 4.; but there is nothing to show the date of the bell or that it was one of the Pien Chung.
with a distinct form of ornament; but it does not seem certain that they were different in shape from the modern bells.

The curious and very handsome frames to which the bells and stone Ch'ing [I. B. 2.] are hung in the Temple of Confucius are probably innovations of the enterprising Sung dynasty, which it is hard for us to regret, though they appeared very vulgar to Ts'ai Yu in the sixteenth century. The illustrated Erh Ya of the Sung dynasty has the frames of both bell and Ch'ing standing on the backs of ducks, the pendants of the former hang from the beaks of phœnix heads, and of the latter from the mouths of dragons, and there are no "hawks" at the top. Wen Miaou Yo Shu shows the frames supported on tigers [or lions] and ducks respectively, as at the present day, but the phœnix and dragon heads above are transposed and the hawks have been added. The frames now used at Hangchow¹ are much the same as this except that the phœnix heads are replaced by dragons and that the hawks also carry long tassels. Wen Miaou Ssu Tien K'ao [A.D. 1878] say that phœnix heads are correct for the frame of the Ch'ing according to Imperial Edict.

5. (1) LING (LING) 鈴. This is the general name for bells with clappers,² and, standing alone, perhaps refers more particularly to the small hand bells used by Taoist and Buddhist priests. These are not often more than 4 inches high, excluding the handle which is usually large in proportion and often elaborately constructed. A common form of handle is a trident, others represent the Eight Genii, and so on. The whole bell is generally made of brass, and the outer surface and the handle are covered with ornament.

¹ See Vol. XXXIII of this Journal.—Notes on the Ting-chi, illustrations.
² It is also applied to quite different instruments.
At a service at the T'ien Hou Kung in Shanghai the band consisted of six instruments:—Flute [Ti], drum [T'ang Ku], gong [Tang Lo], cymbals, a small bell [Chung] and a hand bell [Ling]. The Ling was held in the right hand with the handle inclined outwards, the clapper being held in the left hand and allowed to fall at regular intervals; and at the end of a section of the service it was rung by being rapidly shaken. All the instruments were played very quietly except the flute which played the tune, which the priests were singing, rather loudly.

The Ling is common at Hangchow. And several have been seen at a service in the Lung Fu Ssii, a Lama temple in Peking, used with cymbals, etc. and a large horn. [see Plate VII, fig. 6.]

5. (2) LO TO LING TANG (LO TOUO LING TANG) 駱駝鈴鐗. A Camel bell, used in the north of China. Camels usually go in strings of about seven—the nose of one tied to the tail of the next in front. The driver leads or rides the first camel and the bell is hung round the neck of the last, in order, as it is said, that the driver may know as long as he hears it that his string is intact. The bell is made of six pieces of metal—the circular iron crown, 5.5 inches in diameter; the sides about 13.5 inches high formed of two pieces of thin sheet iron; and a rim, also in two pieces, of thin copper 2 inches wide: a curved iron handle is rivetted to the crown. The mouth is oval. The clapper is a piece of the branch of a tree about 3 inches high and 2.5 inches in diameter, and it is hung by means of an iron staple driven into one end and a bit of string passed through a hole in the centre of the crown. Better bells have a carefully made wooden clapper 1 about 3.5 inches in diameter.

1 Bells with wooden clappers have been known in China for a long time.

The wood bell, to which Confucius is compared in a well known passage (子為木鐗) of the Analects, is explained as a metal bell with a wooden tongue.
with two brass rings below to which are fastened tufts of camels hair. An alternative clapper is a spherical iron bell, about 2.5 inches in diameter like the horse bells described below. It is made of two cups with rims welded together: at the top is a large ring, and below two pairs of holes joined by narrow slits. Inside is a small loose piece of iron.

The outside of the bell is sometimes painted and, at the New Year, decorated with a square of red paper, with a lucky character written on it, pasted on either side; and tassels are sometimes hung to the clapper. The measurements and shape given are subject to considerable variation. The steady clank of this rude bell is one of the most characteristic sounds of the Peking winter.

5. (3) MA LING (MA LING) 馬鈴. Horse bells.

a.—A single hemispherical brass bell with an iron clapper, hung to the collar of a horse, mule, donkey or camel. This is used at Peking, Hangchow and elsewhere. The diameter of the mouth is about 3 inches. At Peking it often has a curious double clapper. At Hangchow it is also called Tu Ling 獨鈴 or single bell to distinguish it from—

b.—The more common string of small bells fastened in a row round the collars of horses, donkeys, etc. These are very much like the Yotl of the Aztecs [Engel p. 81], having no opening but a narrow slit, and each containing a loose ball of metal instead of a clapper. They are of various shapes and sizes; the most common being a sort of oval or pear-shaped, and unusually large specimens measuring 3 inches long and 2 inches in diameter. Another common form is like a pair of slightly opened oystershells.

At Soochow and at Peking little bells with clappers are very commonly used in this way. At the former place the pear-shaped kind are occasionally used by pedlars—four or
five of them tied to a pliant twig which is fixed to the man's apparatus. Very small specimens are tied round the necks of pet dogs.

The use of bells on horses is, or used to be, enforced by law at Hangchow.

Horse bells are also called Hua Ling 花鈴 [Tzü k'ē t'ü shuo] and Hsiang Ling 縉鈴, and at Hangchow 'Lion's heads' [Shih tzü t'ou 獅子頭]. Large bells of this kind—4 or 5 inches across—may be seen in Peking, where they are said to be fastened to the paper lion in certain processions, and are called Lion bells [Shih tzü Ling]. [see Plate VII, fig. 7, 7.]

c.—The above varieties are usually made of brass. Iron bells like the camel bells, but far smaller, and usually more flat in horizontal section, are most commonly used, singly, for pack mules and donkeys in North Kiangsu and Shantung and Chihli, though the other varieties are not unused. The clappers of these flat bells are often made of an iron ring. Such iron bells are also fastened to the collars of mules drawing luggage carts in Peking—carts for passengers seem very rarely to use bells of any sort—and to the beam by which a mill is turned. Yet more roughly made bells of the same general pattern are occasionally used by beggars. These bells are in some ways not unlike the ancient iron bells found in Ireland and other parts of Europe.

5. (4) FÈNG LING (FOUNG LING) 風鈴. Wind Bell. A bell with a clapper hung under the corners of the roofs of temples, pagodas, pavilions and occasionally of private houses. The head of the clapper is formed of an horizontal cross of nearly the same length and breadth as the diameter of the bell, so that a slight movement in any direction will bring one arm of it or another against the bell. To the middle of the cross is hung a thin plate of brass shaped like a
fish's tail and projecting below the mouth of the bell so that it may be moved by the wind and swing the clapper. At Peking plain brass bells about 7 inches high are used; the clapper has a trefoil plate instead of a cross. A curious specimen may be seen hanging on a pailow [a rather unusual situation] inside the south gate of P'ing-yin in Western Shantung. The bell is perhaps 8 inches high, with its edge so deeply indented that it looks more like an iron tassel than a bell, and instead of having a clapper it is hung inside a hemispherical cage formed of a belt of iron supported by two bent straps of iron crossed. Iron seems to be the metal preferred for these as for other bells, both small and large, in Shantung. The familiar name at Hangchow is Féng To 風鐺.

The effect produced by the bells on a pagoda is curiously like that of the bells of a large flock of sheep on the South Downs. It is said that the original intention of these bells was to scare away birds. Bells on a pagoda in Burmah are mentioned by Marco Polo in the thirteenth century [Engel p. 300]. See also Additional Note F.

Wind bells are, I believe, sometimes made square in section.

5. (5) LING TANG (LING TANG) 鈴鐺. A bell used by itinerant sellers of oil in the neighbourhood of P'ing-yin in Shantung. The body is of cast iron and of the same pointed oval shape as the PO CHUNG [4. (2) above], but with a simple loop for handle. It is hung by a long cord or strap to the yoke on which the oil is carried. The lower edge is notched or waved like that of a Chung, a feature not common in bells with clappers, and the surface usually has some simple ornament.

Ling Tang merely means a bell and is not, even locally, appropriated to the present instrument.
6. K'OU CH'IN (K'EOU K'IN) 琵琶. The Jews harp. In Peking it is commonly played by street boys. It is made of iron and appears to be nearly identical with the European instrument and with the Indian Murchang [Engel p. 172]. The length of the frame is 3\(\frac{3}{8}\) inches, the greatest width 1\(\frac{1}{8}\) inch; width at the points, 1\(\frac{5}{8}\) inch. The length of the tongue, measured straight, is 4\(\frac{1}{4}\) inches, of which \(\frac{7}{8}\) inch projects behind the frame: an additional \(\frac{3}{8}\) inch at the thin end is bent down at a right angle and the end is turned over to form a ring. It seems to be quite unknown about Shanghai or in the south. Mrs. T. Richard writes on p. 20 of her Paper:—In a Chinese book of the twelfth century there is a picture of the Jews harp.
CLASS II. Vibrating Membranes.

Section A. Rhythmic.

1. PA FANG KU (PA FANG KOU) 八方鼓.
A tambourine formed of an octagonal frame in each side of which is a quatrefoil hole. In seven of these holes are little brass jingles on pins, and from the eighth hang silk tassels. One side of the frame is covered with snake skin. The diameter is 5.75 inches, the depth 2 inches. It is said to be used by singing girls at Peking.

2. (1) PANG KU (PANG KOU) 擂鼓.
A circular frame, made of six wedges of chê wood kept together by a brass hoop and having a round hole in the middle, covered with cow skin which is fixed with iron nails—professedly 128 in number. The skin is stretched so tight as to be perfectly rigid. It is beaten with two light bamboo sticks without heads. The diameter of a Shanghai specimen is 10.25 inches, the diameter of the central opening 2.25 inches, the height 3 inches. It stands on a folding wooden or bamboo tripod when in use. The name is vulgarly pronounced Pêng Ku among Pekingese actors. At Shanghai it is said to be called Pan Ku 板鼓. [see Plate VII, fig. 8.]

This hoop-drum is a very common instrument, used chiefly in the theatre where it acts as leader of the orchestra, which seems to be generally composed of the following instruments:—Pang Ku, T'ang Ku, a large and a small gong [Lo], cymbals, P'ai Pan and, during the songs, a fiddle.

¹ At Hangchow this is written 班鼓.
[Ching Hu]. The Hsien tzü and Yüeh Ch’in are also used. The So Na is heard when military or funeral processions are introduced, and the La Pa [blown apparently off the stage] in certain military pieces and to mark the close of each scene. The above orchestra is replaced for certain plays by the Pang tzü as leader with its proper accompaniment of Hu Hu and Ti tzü.

2. (2) PAN T‘ANG KU (PAN T’ANG KOU) 牛堂鼓. A circular wooden frame about 14 inches in diameter, 3 inches high and 1 inch thick; kept together with an iron hoop and with skin stretched over one side. It is hung in a horizontal position in front of the performer by means of a blue and white cord passed over his shoulders and fixed to two opposite points of the frame. To the half of the circumference furthest from the performer is fixed a square apron of red cloth embroidered. It is played with the usual thin bamboo sticks. Eight of these drums formed part of one of the many bands in a large funeral procession seen at Shanghai in 1902. Other instruments used in the same procession were:—by Taoist priests, Shou Ku, cymbals, hand bell [Ling], Hsien tzü, Shêng, Ti tzü in pairs, and Hsiao singly. The lay bands used all the above except the Ling, and in addition, Pang Ku, Tien Ku, Chang Ku [carried under the left arm], the ordinary gong about 2 feet in diameter and always in pairs, Tang Lo, P’ai Pan, Shuang Ch’in, Erh Hu, So Na, Chi Na, large T’ai P’ing Hsiao, and one small Hao T’ung. A military band on horseback played several of the above instruments and also a pair of large Cha Chiao. A T’ang Ku was carried in the Lo Ku Ting—a sort of shrine carried by four men—to the roof of which were hung a gong [1. B. 1 (4).] and a gigantic pair of cymbals. The foot soldiers in attendance were preceded by a pair of the large variety of La Pa.
At Peking this drum is hung in an iron hoop only slightly larger than the drum, and is carried in the way described above. At Hangchow a similar drum, called Pao Ku, is placed in a tray formed of a hoop of bamboo laid on two sticks, of which the ends rest against the performer’s body.

2. (3) MAN T'OU KU (MAN T'EOU KOU) 饅頭鼓. The Loaf Drum. A hollow hemisphere of wood constructed like the Pang Ku and kept together with a brass hoop. There is a round hole, about 2 inches in diameter, at the top. The convex side is covered with skin fixed with iron nails. The diameter is about 9 inches. It is said to be used on the stage like the Pang Ku, and to be a southern instrument. It is fairly common at Hangchow but rare at Shanghai. [Plate XII.]

2. (4) HSIAO KU (SIAO KOU) 小鼓. The Little Drum. A circular body of wood, made in four pieces, about 2 inches high. The larger head, which is covered with cow skin, is about 3 inches in diameter. The skin is fixed with large-headed iron nails. This drum is used by rag collectors in Peking, and is struck with a split withy 9 or 10 inches long with a strip of leather wound round the end to form a head.

3. YÜ KU (IU KOU) 魚鼓, or YÜ T'UNG (IU T'OUNG) 魚筒. The second is the commoner name, and Yü Ku is sometimes applied to a somewhat similar drum said to be made at Soochow and described as a bamboo pipe painted red or black, about 12 inches long, 4 inches thick at the larger end, with one head covered with snake skin and with a vibrating tongue inside. The Yü T'ung is a bamboo pipe 26.5 inches long, and about 2.75 inches in diameter, with the larger end covered with a piece of bladder. It is said that it should be held with the open end downwards in the palm of the right hand and struck with the fingers of this hand.
the upper end resting against the right shoulder. It is used chiefly by blind fortune-tellers and by beggars and is properly and usually accompanied with the Chien Pan [I. A. 3. (3)] held up in the left hand. The specimen measured was made at Hangchow. At Shanghai it is called a northern instrument, and it is not uncommon in Northern Kiangsu and in Shantung. Specimens seen in use have been invariably tapped on the covered end. Both Yu T'ung and Chien Pan may be seen 3 feet or more in length. The outside of the pipe is sometimes carved, and the ends and knots of the bamboo mounted with bands of brass. The name Yu Ku is perhaps more common in Shantung.

In December 1903 a small company of strolling musicians were seen at P'ing-yin in Shantung using the Yu T'ung in a rather unusual way. One man was sitting down with his brass mounted Yu Ku laid across his knees and was tapping the covered end of it with his right hand. The second performer was a boy standing and holding a Yu Ku more or less horizontal and tapping it with his right hand, and occasionally turning it up and blowing on the bladder so as to produce a loud whistle—thrice repeated. The third man was holding a cymbal which he was using as a gong. No Chien Pan was used.

"The Yu Ku dates from the Sung dynasty, when it was called T'ung T'ung Pu通同部"—Ch'i Hsiu: Sect. 24. —see p. 155

4. (1) T'AO KU (T'AO KOU) 擎鼓. This is the old and book name of the common rattle drum vulgarly called Yao Ku [Jao Kou] 搖鼓 or, at Ningpo, Huo Lang [Huo Lang] 貨郎. It is a small drum with a stick passing through the body and projecting on one side to form a handle. When the drum is twirled quickly backwards and forwards the ends are hit by two beads hung one on each side of the body. The modern drum varies from 2 to about
12 inches in diameter, the larger ones being flatter in shape than the smaller. It is used at Hangchow by itinerant sellers of cotton cloth and braid and at Shanghai by sweetmeat sellers, when it is called Yao t'ang ku 搖糖鼓, and measures about 3.5 inches in length and 2 inches in diameter. [see Plates VII and XII]. At Chi Nan in Shantung a very small drum on a handle about 2 feet long is used. The heads of this variety are of snake-skin. In the same part of Shantung sellers of cloth use drums about 12 inches in diameter and 2 inches deep,¹ their instruments being sometimes made entirely [including the ‘heads’] of copper or of foreign ‘tin’. At Peking the drum is occasionally made hexagonal, and as many as three may be seen threaded on the same handle. Sometimes there is on the same stick with the drum and struck in the same way a small gong either hung in a wire ring or fixed directly to the stick. This may be seen for instance at Hangchow, Soochow and Peking. At Hangchow the combined drum and gong is called Ting ting tang ērh or Ting tung tang ērh, and would-be purchasers hail the pedlar by this name. At Peking a large drum surmounted by two gongs is used.

A toy rattle drum sold with the Mi Ta Lang at Shanghai is made of a piece of split bamboo bent into an oval and entirely covered with paper. It is pierced with a stick which projects about 6 inches. The greater diameter of the drum is 2.5 inches, the thickness about 0.5 inch. A thread finished with a small knob of wax is fixed to either end of the oval body. Tiny tin rattle drums are sold at the Tai An fair.

Tsai Yu mentions the T'ao Ku in the Ling hsing hsiao wu p'u as a common instrument in his day. The ancient

¹ This drum is called Huo Lang Ku ērh.
Tao Ku was much larger than the modern, but was barrel-shaped like the smallest modern varieties. It was used in religious ceremonies.1

4. (2) MI TA LANG (MI TA LANG) 密達郞. A toy rattle sold at Shanghai. It is a clay drum attached to a small clay figure. The opening, over which a paper 'head' is stretched, is \( \frac{1}{3} \) inch in diameter, reduced to \( \frac{1}{8} \) inch at the back, which is not covered. The whole drum is about \( \frac{3}{8} \) inch thick and 1 inch in diameter. The height of the clay figure is 2\( \frac{1}{4} \) inches. A wire arm from the shoulder is bent downwards at right angles and fits loosely into a thin bamboo stick, just below whose top are fixed four tin arms. The drum is struck with a little slip of bamboo which is passed through a twist of string, stretched from the wire arm to a lower bamboo arm, and alternately lifted and let drop by the tin arms of the stick when the thing is twirled. A similar toy is made in the form of a man sitting in a cart and beating a drum. At T'ai An in Shantung this toy is common at the great Spring fair, and is called Hsien Jên Ta Ku 仙人打鼓—the fairy drummer.

5. (1) SHOU KU (CHEOU KOU) 手鼓. Hand Drum. A ring made of five or six pieces of wood, with the outer edges bevelled and skin stretched over both sides. The measurements at Shanghai are: greatest diameter, 8 inches; diameter of the central opening, 5 inches; height, 2\( \frac{1}{4} \) inches. It is sometimes fixed by the side to a wooden upright standing on a circular base. It is used by priests, who tap it with their fingers, at funerals and at services in private houses, where it may stand on a table opposite to a small bell [Chung].

1 A pair of these drums is still in use in the Confucian temple at T'ai An in Shantung. The same temple also possesses a Chu (with no side hole), Yü, set of Pien Ch'ing, set of Pien Chung of small size, two Po Fu, three larger drums, and two Shé without strings.
5. (2) A flat DRUM is used by blind men in the streets at Peking. It is about 12 inches in diameter and 3 inches thick, and is carried by a string loop—the man holding the drum and drum-stick in one hand.

5. (3) TIEN KU (TIEN KOU) 鼓 KU. A drum said at Shanghai to be used in the theatre in place of the Pang KU. It is a wooden disc made in five pieces, with a circular hole in the middle and covered on both sides with skin. The shape is like that of two plates put face to face. The greatest diameter is 8 inches; diameter of either head, 5½ inches; diameter of the central hole, 2 inches; height, 2½ inches. It is beaten with two light bamboo sticks. [see Plate VII.]

5. (4) A flat DRUM, about 2 feet in diameter, with a wooden handle fixed into the side and probably traversing the body. It is used by the Lamas of the Yung Ho Kung at Peking, and is perhaps a Tibetan instrument. In a procession an attendant carries it on his shoulder, and it is beaten by a priest walking behind. The stick is curved like the shaft of a carriage, and has a small knob at the top. The Japanese have a similar but much smaller drum [Brussels Cat. 684].

Beggars in Peking sometimes use a small drum which they hold by a cord handle underneath.

6. (1) CHIN KU (TSIV KOU) 晋 KU. A drum used in Confucian Temples, placed vertically in a box or frame. In the Temple at Hangchow it is at the west side of the Ta Ch'eng Gate and is beaten before and after the service, when the Sage's spirit is welcomed and bidden farewell. The head of the drum is about 6 feet in diameter.¹

¹At Soochow this drum is about 6 feet long and 6 feet in diameter, and stands horizontally on trestles at the east side of the Ta Ch'eng Gate, with a similar drum about 3 feet long by its side.
It does not seem to differ essentially from the T'ang or Chan Ku. It appears that this drum should be hung horizontally, and in the great Temple at Peking one still hangs in the Eastern Tower [Van Aalst pp. 53, 75]. The true name is not easy to find. Wen Miao Sai Tien K'ao says that the Yung bell and the Fen drum still exist at Ch'üeh Li, standing at the Ta Ch'êng Gate [Sect. VI f. 7]. The Erh Ya says "The large drum is called Fen 鼓", and the drum in question is the largest used at the Confucian services. The Sung dynasty illustration of the "large drum" shows the modern Ying Ku and Tsai Yu [f. 65] gives Fen as an alternative name for the Tsu Ku, a large drum of the same nature as the Ying Ku. Chin is Tsai Yu's name for his drum which is most like the modern Ying Ku; so that neither Chin or Fen seem quite satisfactory names of the present instrument. Fen (Fenn) may perhaps be thought the better of the two.

The bodies of barrel-shaped drums seem to be called K'uang 匠, and are said to be made of willow 楕.

6. (2) YING KU (ING KOU) 應鼓. A barrel-shaped drum supported in a horizontal position by a post which stands on a foot made of four wooden tigers arranged in the form of a cross. The post passes through the drum and has a large silk canopy fixed to its top. The drum stands in the south-east corner of the terrace in the Confucian Temple, and is struck three times after each line of the Hymn to Confucius. The whole drum with its stand is elaborately ornamented with gilt and painted designs. The length is 43\(\frac{3}{4}\) inches, the diameter of the heads 29\(\frac{1}{2}\) inches.

Wen Miao Yo Shu calls this drum Ying 楕 or Chien 建; under which names Van Aalst gives quite a different instrument, saying that the two kinds of Ying Ku are in use together. Ts'ai Yu in his list of ancient drums [f. 66 etc.] has the one in question under the name Chin 晉 [also called Chien, Lu 路,
Lei 雷, or Ling 灵], 66 inches long; and a similar but yet larger and undecorated drum called Tsu 足 or Fén 蕳. Two drums just like the modern Ying, but with small side drums attached, are called respectively Hsiian 頰 [or T'ien 固] standing to the west, and Ying 應 to the east. Tsai Yu's Ying 應 is Amiot's Yn, 100 inches long and with the post driven into the ground. In Vol. VI p. 50 he says that the modern Ying 應 is the Chien Ku of the Sung and Yuan Dynasties, with the side drums taken off; and that the Po Fu was wrongly made to do duty for the side drums1. The Ying 應 of the illustrated Erh Ya is hung by a ring in its side to a crossbar supported on two uprights. Garnier's Voyage d'exploration en Indo-Chine, Vol. I p. 415, shows a large drum hung in precisely the same manner in a Temple in the North of Laos. Ch'üeh Li Tsuan Yao shows the Ying 應 Ku like the modern instrument. [Compare Plate XIII.]

6. (3) PO FU (POU'O, FOU) 拌拊. A barrel-shaped drum 18 inches long, 9 inches in diameter at the ends, and about 13 inches at the middle. The body is coloured scarlet and has a scarf of yellow silk fastened to rings on the upper side; and the heads are painted with a dragon’s head and with clouds. The performer strikes it on both heads with his fingers. A pair of these drums, laid on stands which vary from about 1 foot to 3 feet in height, are used at the Confucian services and struck twice after each beat of the Ying Ku. [see Plate XII.]

The ancient Po Fu seems to have been a straight-sided drum, and was played lying on the performer's knees. The modern instrument is more like the popular Hua Ku. In Wên Miao Yo Shu it is called Fu Ku 拌鼓. Ch'üeh Li Tsuan Yao shows the straight-sided Po Fu.

1 The drum is made to this day with a ring at each side, as if for side drums.
6. (4) HUA KU (HOUC A KOU) 花鼓

A barrel-shaped drum like the above. It was formerly called Yao Ku, and this name occurs in a verse of Su Tung-p'ao who lived in the eleventh century:— "The sound of a hundred Yao Ku is like thunder in the Spring." It has two rings on one side to which a sling is attached. There is sometimes inside an arrangement of wires which make a slight jingling when the drum is beaten. It is used, hanging from the right shoulder, in theatres and by strolling bands. At Shanghai the body seems to be usually black, but the popular name— "Flower Drum"—is perhaps explained by Dennys' remark "The barrel is generally, but not always, ornamented with drawings of flowers, etc." The length is 10½ inches, the diameter at the heads, 4⅝ inches, in the middle, 6⅝ inches. The size may vary considerably. A smaller specimen from Hangchow had no wires inside and was painted red [see Plate XII]. A toy variety about 7 inches long and 3 or 4 inches in diameter is sold in the instrument shops at Shanghai. The body, only slightly curved, is made of a piece of bamboo. Cheap wooden drums are sold to the pilgrims at T'ai An in great quantities.

The Hua Ku is an ancient instrument and was formerly used in the State services under the name of Ya Ku 雅鼓. Indeed it seems possible that it is the Po Fu that is disused, and that the so-called Po Fu is really the Ya Ku. Ch'tiok Li Tsuan Yao has both, calling the Ya Ku T'ao Ku, and saying that the skin should be painted with clouds and the barrel with flowers. The skin for both Po Fu and Ya Ku, Amiot says, was boiled as well as tanned, and the barrels were filled with rice husks. Tsai Yü [t. 70] says that the Po Fu, played.

1 腰鼓百面如春雷. But see Chang Ku [II. B.] below, with the reference there to Additional Note F.
by a man sitting inside the Hall, marked the lines of the Hymn for the singers; the *Ya Ku* [identical with the *Hua Ku*] did the same for the Mimes, and the performer stood outside the Hall. Both drums measured 14 inches by 7 inches.

6. (5) **T'ANG KU (T'ANG KOU)** 堂鼓.  [see Plate VII]. A barrel-shaped drum which is hung vertically by four or [three] rings in its sides in a frame consisting [for smaller specimens] of four [or three] curved uprights joined by cross pieces below. The actual size varies considerably, but the height is generally about equal to the greatest diameter. The heads are of cowskin, the barrel is usually painted black at Shanghai. Two wooden sticks without heads are employed. It is used in theatres, private houses, military camps and stations, etc., and in temples:—large specimens being found in most Buddhist Temples and smaller moveable ones in Taoist Temples.

Tsai Yu shows a similar drum [called merely Ku and described as a common instrument] hung vertically by cords from two rings on opposite sides, in a square upright frame [*Lin Hsing hsiao wu p' u f. 4*].

The T'ang Ku is said at Shanghai to be the drum which is carried in processions in the pavilion called *Lo Ku Ting* [II. A. 2 (2)]. The drum is placed on end in the bottom of the Ting and is covered with a board in which is a round hole through which the top of the drum is visible. A different drum is perhaps used for this purpose in the south [Dennys].

It is commonly used at Peking for funeral ceremonies and processions, usually lacquered black with gilt ornament; the uprights of the frame sometimes straight and 6 or 7 feet high. Drums of the same shape are also carried in processions without frames, but slung at the back of a boy and beaten by
another boy walking behind. These are either black and gilt or plain gilt. [see Additional Note F.]

6. (6) CHAN KU (TCHEN KOU) 戟鼓. The War Drum. This appears to differ from the T'ang Ku only in its proportions, the height being about half of the diameter. It is used by soldiers; but it is perhaps interchangeable with the T'ang Ku, as soldiers may be seen using the latter and a priest has been seen buying the Chan Ku. At Peking drums of this shape are commonly used in processions, being slung over a man's shoulder by a ring in the side and beaten by another man following. The body is there commonly gilded, elsewhere it is usually black. Toy drums of this shape are made for the pilgrims at T'ai An.

6. (7) A DRUM said to be used by cavalry. A specimen seen at Hangchow had an urn-shaped body about 12 inches high. The diameter at the top was about 10 inches; at the bottom, about 6 inches. It is hung, probably over the shoulder, by a cord fastened to opposite sides of the top.

7. HA MA (HLA MA) 蝦蟆. A clay frog. The body is hollow and over the underside, which is open, a piece of stout paper is stretched. Through the middle of this paper a single horse hair is passed and prevented from coming out by a knot inside. When the wetted finger and thumb are drawn rapidly along the hair the vibration produces a loud harsh sound not unlike the croaking of a frog. This is one of the many toys sold at the fair which is held every spring for the benefit of pilgrims at T'ai An in Shantung.

Section B. Tonal.

1. CHANG KU (TCHANG KOU) 枉鼓. The body of this drum is formed of a bamboo pipe, 18 inches long and 2 3/4 inches in diameter, with a wooden bell fixed to either
end. One of these is cup-shaped, 5 inches long and 7 inches across the mouth; the other is like the bell of a trumpet and measures 9 inches in diameter. The heads are formed of skin stretched over iron rings. That at the cup-shaped end is of cow skin and is 10½ inches in diameter; the other is a disc of snakeskin sewn into a ring of cowskin, and is 11½ inches in diameter. The heads are kept in position by yellow cords which are bound tightly round the middle of the bamboo pipe. Eight loops of this cord are attached to eight wire hooks, which are fastened to the ring of either head. Each cord of every loop is connected with the nearer cord of the adjoining loop by means of a moveable leather ring. When these rings are pushed towards the heads they separate the pairs of cords, which would naturally be close together, and thus shorten the loops and tighten the heads. The whole body is painted black; the total length is 29½ inches. The performer is said to hang the drum in front of him by a strap over his shoulders, and to beat both heads with his hands [but compare II. A. 2. (2)].

It is used in processions at Shanghai and perhaps in the south. The Chang Ku is perhaps the only Chinese drum of which the heads can be tightened by means of cords.

The Rev. E. W. Galpin writes: "This drum with brace might have been introduced from India where such methods of tuning are common." This is perhaps confirmed by a passage in The Middle Kingdom [vol. II. p. 98]: 'One treatise on beating drums scientifically dates from about the year 860 A.D., and contains a list of about one hundred and twenty-nine symphonies, many of which are of Indian origin.' For the tuning of drums in China in former times, and for the various names of this particular drum, compare Additional Note F. [see Plate XII.]
CLASS III. Wind Instruments.

Section A. Flutes and Whistles.

a.—Vertically blown.

1. HSÜAN (HIUEN) 墨 or 墨. A small egg-shaped whistle made of black clay. It has a blow-hole at the apex, four small finger holes on one side and two on the opposite side. Amiot says that the addition of a sixth hole to the primitive five was an improvement of the Chou dynasty. "Wên Miao Yo Shu, Ch'üeh Li Tsuan Yao and Lü Lü Chêng I however draw and describe the five holed variety, so that the sixth hole is more probably quite a modern addition." The Reverend F. W. Galpin writes: "The HSÜAN gives the following scale:—

\[\begin{array}{cccccc}
1 & 2 & 3 & 4 & 5 & 6 \\
\end{array}\]

tables

The first note is got by turning the lips downward and blowing lightly. It will be noticed that the five hole HSÜAN gives the octave C—C. The sixth hole gives D, and it seems probable that the low C was omitted—it is hard to get." It seems to make no difference in what order the holes are opened. [see Plate VIII.]

1 Wên Miao Yo Shu [VI f. 3] says however that an instrument of the Sung dynasty had six holes; and that about A.D. 1035 a seven holed HSÜAN is mentioned. See Additional Note F.
The Hsūan is traditionally one of the most ancient of Chinese instruments, and is highly prized. It is only used in the State services. The height is 2$\frac{1}{4}$ inches; greatest diameter, 2$\frac{1}{2}$ inches, diameter of the base, 1$\frac{1}{2}$ inch, diameter of the blow hole, $\frac{3}{8}$ inch.

The ancient instrument was, according to Tsai Yū [f. 37], longer in proportion to its diameter, modelled apparently on a large goose's egg with the thick end cut off. The height was 3.5 inches, the diameter, 2.4 inches. There were four finger holes 1.7 inch from the bottom and equally distant from each other, and a fifth 0.5 inch from the bottom, forming an inverted isosceles triangle with two of the upper holes. The smaller variety was of the same height, but 1.75 inch in diameter. Tsai Yū says oddly that the goose's and hen's egg only gave the size and not the shape of the larger and smaller Hsūan respectively. The finger holes, whether five or six, have been unsymmetrically arranged throughout the present dynasty.

2. (1) P'AI HSIAO (P'AI SIAO) 排簫. Pandean Pipes. Sixteen small bamboo pipes fixed in a row in a wooden case. Each pipe has a notch cut in the upper edge like that of the Yo. The pipes are tuned to the twelve notes of a complete octave and the four top notes of the octave below. The pitch of this instrument and of the Pien Chung and Pien Ch'ing seems to have been lowered in this dynasty so that Huang Chung is the fifth note instead of the first as it was in the Ming dynasty and before. The pipes are now arranged with the longest at the ends of the row, and the shortest in the middle; and vary in length from 11.5 to 4.75 inches. Wên Miao Yo Shu calls the P'ai Hsiao, F'eng Hsiao 凤簫 [a name which appears in Ch'ueh Li T'suan Yao also], and names eleven other varieties. But for the wooden case, the P'ai Hsiao retains
very nearly the form of the ancient Hsiao, which is thus the only one of the old wind instruments to survive practically unchanged.

From Tsai Yu we learn that in the Sung dynasty the pipes were all of the same length and were fixed in a simple frame,—as is shown also in the illustrated Erh Yu. The lower ends of the pipes were stopped, and they were tuned by means of holes cut in the required positions in their sides. The wooden case [Tu 檳] was added in the Yuan dynasty, and was then black with gilt ornament. In the old Hsiao the lowest note was on the left side, and the scale went consecutively from left to right; in the Sung dynasty this order was reversed [f. 16]. In the Ming dynasty the ancient plan had been restored. [see Plates XII and XIII.]

The P'ai Hsiao is used only in the State services.

The Rev. F. W. Galpin has Pan pipes called Sliao, without a case. The instrument was perhaps got in the south, as it is, at least, uncommon about Shanghai, or in the north.

2. (2) YO (JO) 箫. A vertical bamboo flute open at both ends. A little notch with bevelled edge to blow against was cut at the upper end, and there were three [or possibly six] finger holes near the lower end. Tsai Yu [f. 17] says that with all the holes shut the instrument gave Kung [D], or, blown harder, Chih [A]; with the lowest hole open, Shang [E], or Yu [B]; with the two lower holes open, Chiao [F sharp], or Ho [C sharp]; and with the middle hole closed and the upper and lower holes open, Chung [G]. The Yo tuned to Huang Chung of the lower octave had the following measurements:—length, 20 inches; diameter, 0.707 inch; internal diameter, 0.5 inch. The diameter of the finger holes was 0.25 inch, and their centres were 3, 5, and 7 inches respectively from the lower end of the pipe.
III.A.a Tsai Yu had seen a genuine specimen of the ancient Yo, and another is recorded to have existed in A.D. 1119. [see Plate III, Fig. 1].

The Yo is now obsolete except as a wand used by the Mimes in ritual dances; and this has been the case certainly since the sixteenth century, if not for two thousand years past. The form of pipe is preserved in the P'ai Hsiao. As now used the Yo is a pipe 22 inches long, open at both ends, and with six roughly made holes. Wen Miao Yo Shu shows a short pipe with two finger holes near the lower end and a blow hole near the upper end, which is adorned with a dragon's head carrying a large pendant [Fig. 1. a.]. This transverse Yo is mentioned by Tsai Yu.

2. (3) FENG HUANG HSIAO (FOUNG HOUANG SIAO) 凤凰簫, or TUNG HSIAO (TOUNG SIAO) 洞簫; Plate III, Fig. 2. A bamboo pipe made in the same way as the Yo, except that the top is closed by a knot of the bamboo. In this knot a notch is cut joining that in the side. There are six finger holes, the first five on the upper side and the sixth underneath. There are also lower down the pipe two holes side by side underneath, called in Lü Lü Chêng I 'holes for emitting sound'. They are used for attaching a loop to hang the instrument up with. The pipe should be cut from the root of the bamboo with the knots [nine in number] close together at the lower end, which swells into a sort of bell and is tipped with bone. The length varies a good deal; a long specimen from Hangchou is about 27 inches long, and $\frac{7}{8}$ to $\frac{3}{4}$ inch in diameter. One at Shanghai measured 23$\frac{1}{4}$ inches by $\frac{3}{8}$ inch. The pipe is stained dark brown or black and varnished, and usually has an inscription of some kind.

1 出音孔. Finger holes are called in books k'ung 孔, hsüeh 孔 or chiao 孔; in common speech, yen 眼.
engraved on it. It is perhaps never seen with black bands like the Ti tzü.

It is commonly used at weddings, funerals, and other religious ceremonies, and is said to be a favourite instrument with the educated classes. A cheap variety is sold in the streets of Shanghai. The partial covering of a hole to produce certain notes, as directed in Wên Miao Yo Shu, is pointed out in the Brussels Catalogue [714.—a Japanese flute] as ‘intéressant’ and apparently rare; but it is a device constantly required with most Chinese flutes.

In the Confucian ritual this instrument is called simply Hsiao. It has no bell, and is coloured scarlet, and measures 22½ inches in length. Wên Miao Yo Shu gives a special notation for the Hsiao, but this is not now used. The scale of the ritual variety ascertained by the Reverend F. W. Galpin, is:—

\[
\begin{array}{cccccc}
1 & 12 & 1-3 & 1-4 & 1-5 & 236 & 1-6 \\
\end{array}
\]

The Hangchow specimen described above gives:—

\[
\begin{array}{cccccc}
1 & 12 & 1-3 & 1-4 & 1-5 & 1-6 & 5 \\
\end{array}
\]

Of the origin of flutes with finger holes little seems to be known; and the relation of the Hsiao to the ancient Ti is not very clear. Van Aalst [p. 70] says that the Hsiao was invented in the Han dynasty, and introduced into state ritual in the Yuan dynasty, as will be seen also in Additional Note F. Bamboo. c. Tsai Yü

1 The ancient Ti was certainly a vertical flute. The question is whether it was the Fêng Huang Hsiao or, as Tsai Yü maintains, a whistle.
[f. 24] writes: 'The Annals of the Chin and Sung dynasties both have the rules and measurements of the Ch'ang Ti 長笛... this... is the thing now called Tan Hsiao 單篳'. Lü Lü Chêng I, Vol. III, f. 11 has 'The Hsiao is what was anciently called Ch'ang Ti.' Wên Miao Yo Shu has: 'Chu Tsz [twelfth century] says: what is now called Hsiao Kuan¹ is the ancient Ti; the Yün-Hsiao is the ancient Hsiao [Pan pipes], the Yün Hsiao is the P'ai Hsiao.' and 'from the T'ang dynasty the vertical flute was called Ch'ang Hsiao, the transverse, Ti.'—Vol. V, ff. 18, 22. The modern school book Tzû k'é t'ü shuo says that the Hsiao is the ancient vertical Ti, and this is clearly the common opinion.

Tsai Yü however seems to be right in saying that the Hsiao superseded [as a playable instrument] the Yo, which it very nearly resembles, rather than the Ti. He says too that the Yo was anciently called Hsiao 箫 [ff. 17, 24], though this perhaps does not affect the question. The invention of the Hsiao was perhaps the first step in the evolution of the Ti [whistle] from the Yo. It follows that either Tsai Yü is wrong in saying the ancient [i.e. c. B.C. 1000] Ti was a whistle, or that the tradition of the invention of the Hsiao by Yeh Chung in the Han dynasty is wrong.²

¹ The Hsiao Kuan is described in Additional Note F. Bamboo, p, and was certainly not the Fêng Huang Hsiao; but then it was identical with the Ch'ang Ti, and the Ch'ang Ti was what Tsai Yü called Tan Hsiao, and Tan Hsiao was at least probably what we now call Fêng Huang Hsiao. The extreme confusion of names and vagueness of description make the question too intricate.

² The origin of the arrangement of the finger holes of the Hsiao is in no degree made plainer by the determination of the relation of the Hsiao to the ancient Yo or Ti. Possibly what happened in the Han dynasty was the invention of a new arrangement of finger holes on a flute whose principle was already ancient.
The Er hu Ya throws very little light on the question, unless it is by the omission of the name Ti. It gives Hsiao [Pan pipes], Kuan, and Yo. When the name Ti was revived, it may have been applied to the wrong instrument.

The Sinking-Hachi—the corresponding flute in Japan—has the top open like the Yo, and part of the edge bevelled, but has no notch. There are four holes in front and one behind.—*Brussels Catalogue*, 714.

2. (4) KO LING (KO LING) 鈴鈴. Whistles carried by pigeons. The correct name is used at Hangchow. At Peking they are called Shao-tzu 同子, whistles, or Hu-Lu 菸蘊, gourds. They are made either of a small hollow gourd, with the top replaced by a whistle, or of short bamboo pipes with similar whistles at the top, or, generally, of various combinations of these two methods. Horn is sometimes used instead of a gourd. At Peking, the place most noted for their manufacture and use, there must be thirty or forty different varieties, and the number of whistles on a single specimen varies from one to twenty-five. A simple variety differing very slightly from the Pekingese patterns is made at Hangchow. A slip of bone or bamboo fixed to the under side is used to attach the whistle. This slip of bone is put between the two middle feathers of the pigeon's tail and secured below with a piece of wire; and the two feathers are tied together so that the thing cannot slip out behind. The diameter of a large gourd is perhaps 4 inches, of a small one 1 inch.

The use of these whistles is said to date at least from the Sung dynasty. A reference to the Ko Ling is quoted from Wang Yen-Hung of the Ming dynasty, in the Kuang Shih Lei Fu, a sixteenth century revision of the Sung dynasty Shih Lei Fu, last published in 1700 or 1765. Ma Tuan Lin does not seem to have known the Ko Ling—see Additional Note F. [see Plate XII.]
2. (5) TI KO TZÜ (TI KO TZEU) 地鴿子. A whistling top. As made at Peking the body is a ring of bamboo with wooden top and bottom; the sides are convex with projecting rim at either edge, and are bound with two bands of silk. There are two openings with bevelled edge to form a whistle, on opposite sides of the body, and the inside is divided into two unequal compartments so that two different notes are produced. The body is pierced by a bamboo pin 6.5 inches long, the lower end, which is pointed, projecting 1.25 inch. The height of the body is nearly 1 inch, the diameter about 1.5 inch. The top is spun on the ground and is steadied, while the string is pulled, by a piece of bamboo with a hole at one end through which the string passes. The size varies. The wild shriek of this top as it starts is a well known sound at the temple fairs in Peking, where there are usually two or three stalls devoted to the sale of this and the double-headed top described below.

A roughly made top of the same kind is found in Shantung and elsewhere. At Shanghai it is called Ti Wéng 地鳴. Ti Ko Tzü, 'Pigeons on the ground,' is the Hangchow name, and the spinning of such tops is said to have been a very favourite amusement for the pleasure parties about the West Lake there before the T'ai P'ing rebellion.

2. (6) K'UNG CHÈNG (K'OUNG TCHENG) 空筝. A double whistling top consisting of two drums like that of the single top, one on each end of a short wooden stick. The top is spun in the air, balanced on a string which is passed twice round its waist. Each end of the string is tied to a stick, and a peculiar jerking of these sticks makes the top spin. When a great speed is attained the turn of the string is slipped off, and the performer then makes his top
run up and down on the string, flings it thirty feet or more into the air and catches it again on the string behind his back, and so on.

There are many different sizes, of which the larger weighing some pounds and made of wood coloured black, are perhaps peculiar to Peking. The measurements of a small bamboo specimen from Peking are:—Total length, 4½ inches; thickness of each drum, ⅝ inch; diameter, 3½ inches; diameter of the boxwood axle, at either end, 1¼ inch; in the middle, ¼ inch. Each drum has two openings giving different notes and is divided inside into two compartments; the opening for the lower note measures ⅞ by ⅝ inch, and for the higher note ⅞ by ⅞ inch; and the compartment for the latter is about one fourteenth part of the whole interior space. There are sometimes four whistles in each drum. The drums are bound with silk in grooves near the edges. The sticks are willow sticks about 21 inches long, and the string is 78 inches long.

At Peking, when the days are cold early and late, but hot at noon, in the Spring or Autumn, it is called 'Ka Ka weather' from a distant likeness to the shape of this top [large at the two ends and small in the middle], which appears to be the typical instance of the shape known as Ka Ka.

A rough instrument similar to the above is made at Shanghai, where it is known as Ti Wang Niu, T'ien Weng 天嗡, Ch'et Ling 扯鈴, or Fei Ling 飛鈴. The total length of an average specimen is 5½ inches; thickness of each drum, 2½ inches; diameter, 2½ inches. Length of the sticks [bamboo], 10 inches; of the string, 55 inches. The tenth month and, more especially, the New Year seem to be popular times for spinning Tops at Shanghai, and certain shops are full of them at those seasons, making them of different sizes.
and proportions, but never very large, or with the drums so flat as those made in Peking. A slightly different shape is made in Shantung. [see Plate XII.]

2. (7) A toy sold at Shanghai about New Year's time, formed of a round piece of wood $2\frac{1}{4}$ inches in diameter. There are four notches in the edge into which are glued empty nutshells of the Pai Kuo (Salisburia adiantifolia) with a slit cut across each to make a whistle. There are two small holes in the wooden disc through which a long string is put, the two ends being afterwards tied together. One end of the string loop thus made is held in either hand, and it is alternately pulled and let go in such a way as to make it twist and untwist itself, spinning the disc with its nutshell whistles rapidly backwards and forwards as it does so.¹

3. (1) T'AI P'ING HSIAO (T'AI P'ING SIAO)

太平箫. A bamboo pipe 16 inches long and $\frac{3}{8}$ inch in diameter, with a whistle head formed by nearly closing the top with a wooden plug and cutting a hole in the pipe, $\frac{8}{3}$ inch from the top, and usually at the back. There are six finger holes $1\frac{1}{2}$ inch apart; $2\frac{1}{4}$ inches above the sixth is a hole covered with a thin membrane taken from the inside of a reed: underneath, and $1\frac{3}{8}$ inch below the lowest finger hole are two holes side by side through which an ornamental tassel or a string to hang the thing up by may be tied; and below these again, but on the upper side, are two more holes. These latter, if the holes underneath are covered, will give two semitones below the ordinary compass, but they are not intended to be so used. A skilful player could probably get two complete octaves with the six finger holes. The fifth and octave of the lower notes are easily produced by leaving the sixth hole open: the octave of each note can also be got by blowing harder, and the lowest holes will give the twelfth also. The scale begins approximately on B flat. The membrane is sometimes

¹ This instrument has now become familiar in Europe under the name of Diabolo.
protected from the rain by a flap of leather tied to the pipe. The better instruments sold in shops are stained dark brown and varnished. The commoner form at Shanghai is a cheap kind sold in the streets, made of green bamboo and often prettily ornamented with patterns scratched on the surface of the pipe. The smaller ones have generally the finger-holes and the membrane-covered hole only; a large specimen with the extra holes is about 14 inches long.

All the holes of this whistle correspond very nearly with those of the Ti tzü. [III. A. b. 2.] It is not, as a rule, used in theatres or at religious ceremonies; a large pair, bound with silk like the Ti tzü, may however be seen in funeral processions at Shanghai. The instrument is well known at Hangchow and at Peking. In Shantung it is called Hsiao Ti 鼓笛 [Plate III., Fig. 3.]

The principle of the T'ai P'ing Hsiao is the same as that of the ancient Ti 途 [Plate III., Fig. 4.], as described by Tsai Yu [f. 24.]. He supports his idea that the Ti was a whistle thus: An 'ancient poem' on the Ti speaks of it as the Ch'ü 楚, a name which it seems to have got from being a favourite instrument with the people of Ch'ü in what is now Hunan. And a whistle called Ch'ü, with two finger holes, existed in the sixteenth century. The ancient Ti had three or, less probably, six finger holes. Secondly, he found the Ti described on good authority as identical with the Yo [2. (2) above] in all other respects, but longer. This, he argues, can only mean that, since the Ti and Yo were of the same pitch, they would need the same length of open pipe and consequently the wooden plug in the whistle head of the Ti would need a little extra length of pipe, or rather that the extra length of the Ti can only have been to accommodate such a plug. It is perhaps not unfair to add that a whistle is to this day called Hsiao Ti. This Hsiao Ti answers more nearly than any other
existing instrument to the description of the *Hsiao Kuan* of the thirteenth century [Additional Note F.], and the persistent application of the name *Hsiao* to this whistle supports the idea of the possible identity of the two. If, as thus seems possible, the *Hsiao Kuan* was a whistle, *Ts'ai Yu* may probably claim *Chu Tzü* as a supporter of his view that the ancient *Tü* was a whistle [see above under *Fèng Huang Hsiao*].

A *Ti* made from *Ts'ai Yu*’s description gave the following scale. [The letters under the notes indicate the holes to be opened. *a* means the lowest hole, *b* the second hole and *c* the third; *a*, *b*, or *c* means that the hole in question is only partially open.]

```
\begin{align*}
a &\quad a \quad a \\
b &\quad a \quad ab \quad ab \\
c &\quad abc \\
\end{align*}
```

**3. (2) HUA MEI CHIAO TZÜ (HOUA MEI KIAO TZEU) 畫眉哨子**. A whistle used to imitate the singing of birds. It is a pipe of bamboo 1.5 inch long and 0.875 inch in diameter, open at both ends. A square hole is cut in the side near one end, and the part immediately above this hole is left projecting 0.25 inch beyond the top of the pipe. This projecting part is split in its thickness from the top down to the hole, and the outer half is raised, and kept in position by two wedge shaped slips of bamboo. A square mouth-piece is thus formed which directs the breath against the sharp edge of the hole. The performer gets different notes by opening and closing in various degrees the upper end of the pipe with his chin and the lower end with his hand. The compass is considerably more than an octave. The measurements vary a good deal. Sellers of cheap whistles and flutes,
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in the streets of Shanghai usually have a string of these whistles also. In Shantung they are called Hua Mei Shao érh. Hua Mei is the name of a thrush Leucodiopteron Sinense (Giles s.v. 瀅). [see Plate VIII.]

3. (3) SHAO ÉRH (CHAOEUL) 嘟兒. Toy whistles made of dark grey clay and sold in Peking. They are made of several different shapes. One is in the shape of a bird, with red and white markings on the back. It is blown through the head, the whistle being in the throat. On each side of the body is a finger hole, so that three notes can be produced. The length is 2.875 inches. Another specimen, shaped like a fish and better modelled than the bird, is about 2.5 inches long, and has no finger-hole. The notes are very shrill [Brussels Catalogue, 704, 705, 706.] Similar whistles, [called sometimes Ku Kuai] rather more roughly made and varying much more in size and note than those sold in the streets of Peking, may be had at the annual fair in T'ai An.

These whistles seem to be very much like those obtained in Mexico and Central America; and a somewhat similar thing is made in Spain. At Cairo there are plaster whistles of about the same size and make [Engel pp. 66, 143, 224].

A very small tin whistle in the shape of a cock can be got at Shanghai:

3. (4) Toy whistles sold at the fair in T'ai An.

a. Mien Hua Ch'é Tzü 綿花車子. A bamboo pipe about 5 inches long with the whistle cut at the lower end. The wind passing through the pipe turns a tiny spinning wheel. At Peking a similar whistle is made with four or five wheels of gaily coloured crinkled paper, just touching each other so that when the first is turned it moves the rest.

b. A very small whistle forming the tail of a jointed bamboo dragon.
c. A piece of bamboo 3 or 4 inches long with a whistle at the upper end and the lower end nearly or quite closed.

d. Shui Ch'iang 水鑼. A small bamboo whistle 2.5 inches long inserted into the side of a larger bamboo 5 or 6 inches long. The latter is closed at the bottom with a knot and filled with water. The size varies. It is used to imitate the singing of birds.

4. CH'UI CHI ĖRH (TCH'OUEI KI EUL) 吹嘮兒. A toy made at Hangchow. It is a hollow brass disc, ⅔ inch in diameter and about ⅔ inch thick, concave below and convex above with a handle at one side ⅔ inch long. The blow hole, ⅓ inch large, is in the middle of the upper side, and there is a finger-hole of the same size in the middle of the lower side. The notes produced are very shrill. Street boys make a whistle on the same sort of principle with two copper cash.

At Peking a little whistle is made of a strip of tin of which one end is wrapped over with a second piece of tin so as to form a passage for the air, while the other end is curved over so that its edge meets the current of air.

b.—Transversely blown.

1. CH'IH (TCH'E) 笛. A bamboo flute used only in the State services. The length is 17.75 inches, the external diameter, 1.1875 inch. The blow hole is 5.6875 inches from the right hand end, and the pipe is stopped close above it. The other end has a stopper with a small hole in the centre. There are six finger holes arranged like those of the Féng Huang Hsiao, the first five on the side furthest from the performer, the sixth on the near side. The five holes are separated by spaces of about 1.25 inch, the lowest being 3.375 inches from the end. The sixth hole is equally distant from

1 or left hand. The Ch'ih is made in pairs—right and left handed.

2 Compare Additional Note E.
either end. The scale, as ascertained by the Reverend F. W. Galpin, is:—[vide Plate III, Fig. 5.]

\[ \begin{array}{cccccccc}
\text{a} & \text{b} & \text{bc} & \text{bd} & \text{bcd} & \text{b-e} & \text{b-f} & \text{b-g} & \text{g open}
\end{array} \]

The use of a flute of this nature under the name of Ch'ih seems to date at least from the Sung dynasty. The Sung illustrations to the Ėrh Ya show a flute with three holes near one end and one on the opposite side near the other end [Plate III, Fig. 7.], thus perhaps preserving a likeness of the three-holed Héng Ch'üi. 

Lù Lū Chéng I gives the modern instrument. In the Ming dynasty the small hole in the covered end was used as a finger-hole and there were only four holes in front, as may be seen in the picture in Wén Miao Yo Shu and is described by Tsai Yü in a section headed 'The modern Ch'ih is no Ch'ih.'

Ch'ueh Li Tsuan Yao shows this four-holed instrument, and in Wén Miao Ššü Tien K'ao we read: 'The Shih Tien K'ao 謹奠考 says: P'ao Hsi made the Ch'ih of bamboo. The notes are mournful and in tune with the Hsüan. It is 14 inches long, with the ends open, and has variously ten, nine, eight, seven, or six holes. Nowadays there is one hole at the back, four in front, and one in the stopper.'

Tsai Yü had examined a genuine specimen of the ancient Ch'ih, and his account of it is here given as the instrument appears to be of special interest.

"While the contents of the illustrated books up to the Tang dynasty all have some things correct and some mistakes, yet those that follow true principles are still many; but from the Sung onwards the errors are increased greatly. For example, of the five sorts of Bamboo Sound" ¹

¹ The Chinese distinguish eight qualities of sound, produced respectively by instruments of eight different materials. [Additional Note F.]
instruments not one is correct. As a rule the ancient instruments were
delicately made, small and short; the modern are coarse, large and long.
In fact, from the disuse of the millet foot and the mistaken use of the
contemporary foot, the T'ai Chi'ang of recent times has made the
transverse Ti 笛 act for the Ti 箫, the Single Hsiao for the Yo, and
what is called the Pai Hsiao has wrongly added a wooden case
disregarding the old fashion of the Han and T'ang, and what they call
Ch'ih and Yo are faulty, coarse, vulgar, and ridiculous. Once at the
house of an antiquary I saw an ancient instrument, the copper coloured
as if it were varnished, rather like a poem jar 詩筒: hollow in the
middle, its two ends were covered; in the centre of neither of the covers
was there any hole. In front, on either side left and right were three
holes, in all six holes; the diameter of the holes was one fên and a half.
Only in the middle one hole on top opened upwards, with a diameter of
perhaps three fên. On the back were engraved three characters: all
of the ancient Ch'uan style exceedingly unusual, namely, Huang Chung
Ch'ih 黃鍾錶．"

"The size of the circumference and diameter of the two ends was
identical with the cash of K'ai Yüan currency: laying cash side by side,
fourteen of them corresponded with the length of the Ch'ih. What was
called the Great Ch'ih was one foot and four inches long. Musicians
credibly record that the diameter of the K'ai Yüan cash was one inch of
the ancient millet foot. Measured with a thin slip of bamboo the
diameter of the hollow was seven fên; the thickness of the pipe, one fên
and a half. Blowing it produced a sobbing sound, its notes were
harmonious and refined; a veritable relic of the Three Dynasties, rare and
invaluable. The Erh Ya [B.C. 400] says: 'The large Ch'ih is called
Yin 彝. Note—The Ch'ih is made of bamboo; its length, 1 foot 4 inches;
circumference, 3 inches; one hole opens upwards inch [sic] 3 fên, called
Ch'iao; it is blown transversely: the small variety 1 foot 2 inches.'

1 The 'millet foot' is equivalent to the ancient Hsia dynasty foot,
which T'ai Yü generally uses. The length of the pipe giving the note
Huang Chung was taken as one foot, and it was found to be equal to one
hundred millet corns laid side by side. Thus the foot was divided into
ten inches, and each inch into ten parts called fên. The inch is the same
as the English inch.

2 T'ai Chi'ang 太常 seems to have been the title of some high
officer in the Board of Rites, or of the Board itself.

3 On f. 17 this same Ch'ih is said to have been made of copper
[or bronze].
The *Kuang Ya* says: "Eight holes..." a quotation from *Sun Yen* says: 'The Ch'ih wails, the sound is like an infant weeping.' *Cheng Ssu Nung*’s edition of the *Chou Li* says: 'Ch'ih: seven holes;......'. The works of Chu Hsi have: "Ch'ih: 1 foot 4 inches long, 3 inches round, seven holes, one hole facing upwards 3 fen in diameter, altogether eight holes; blown transversely." The instrument seen at the present day had only seven holes including the blow hole. The fact that former scholars have made eight holes is due to their mistaken following of the *Kuang Ya*. Only *Cheng Ssu Nung* is correct in making seven holes [ff. 24, 25]."

In a separate paragraph *Tsai Yu* gives the positions of the seven holes. They were so arranged that their centres divided the whole length of the pipe into six, and into four, equal parts. That is to say the blow hole was in the middle, and the three finger holes on either side were distant $2\frac{1}{2}$, $3\frac{1}{2}$, and $4\frac{3}{4}$ inches respectively from the centre of the blow hole [see Plate III, Fig. 6]. He says too that it was impossible to assign definitely a given note to a given hole.

A pipe of the above dimensions, but with both ends open, gives a chromatic scale from E to A sharp. The Reverend F. W. Galpin writes:—With one end open I get the following rough scale¹:

![Music staff with notes](image)

With both ends stopped it will not give a proper scale at all, though notes ranging from $\begin{align*} &\text{C}\text{-}3\text{-}5\text{-}4\text{-}2\text{-}3\text{-}4\text{-}5\text{-}6 \\
&1\quad 12\quad 13\quad 4\quad 45\quad 456\quad 1-6\end{align*}$ or even higher with harmonics, can be produced. Mr. Galpin writes again:—If the bore were larger it might be made

¹ Numbers placed below or above a musical note indicate the hole or holes to be opened to produce the note. Corresponding numbers will be found in the illustrations.
to play in the same way as the Hsüan on the principle of the musical Resonator.

No authority has been found for opening either one end or both the ends; and it is to be noticed that the difficulty of producing a scale did not make Ts'ai Yu doubt the genuineness of his specimen.

The Chinese connect the Hsüan [III. A. a. 1.] and Ch'ih together, and in the Book of Odes it is written: 'The elder brother blows the Hsüan, the younger blows the Ch'ih.' In the modern reproductions of the two instruments the similarity of their tone is quite noticeable, especially in the lower notes.

2. (1) Ti (TI) 笛, Plate III, Fig. 8. A pipe of bamboo with generally not more than one knot, and tipped with bone. There is a variety with three or four knots, and the pipe stained and varnished like that of the Hsiao. The total length is 26.25 inches, the diameter not quite 1 inch. The pipe is stopped just above the blow hole, which is 10 inches from the left hand end. The part above this is often a separate piece of bamboo. The other eleven holes are the same in arrangement and use as those of the T'ai P'ing Hsiao [III A. a. 3. (1)]. Mr. Galpin informs me that the device of covering a hole with membrane was not characteristic of the English Recorder as is sometimes stated; but that in the early years of the last century a transverse flute, called the Voice Flute, was produced in London with a membrane exactly like that of the Ti. In China the membrane has been used for at least six centuries [v. Additional Note F.]. It is now found as a rule on the Ti and T'ai P'ing Hsiao, and occasionally on the single reed Kuan tzü [III. B. c. 1.]

1伯氏吹簧仲氏吹篳
2"It is worth noting that the Ti has no back hole as on the Hsiao, but six instead of five in front."—F. W. Galpin.
The pipe is lacquered black or, more commonly, left the natural colour of the bamboo and bound with silk at frequent intervals—the silk bands being afterwards smeared over with some black material. *Ti tsü* is the common name at Peking and Shanghai; at Hangchow it is always *Ti' erh*.

The *Ti tsü* is very commonly used by amateurs, by the popular bands called *Ku ch'üi pu* 鼓吹部 or *Ch'üi Shou* 吹手, at weddings and funerals, at the State services, by blind fortune-tellers [Brussels Cat. 689], by Taoist priests and a certain sect of Buddhists, and to accompany the *K'ün Ch'iüang* music in the theatre. Being the commonest instrument of fixed pitch it is used in the theatre as the standard for the strings and voice,—the different keys being named with reference to the position on the *Ti tsü* of the note *Ch'ê* [the outer string of the *Hu Ch'in*] in each. The part for the *Ti* in *Wên Miao Yo Shu* is written in the same notation as that used for the *Hsiao*. The scale of the modern ritual *Ti* is:

\[\text{\includegraphics{scale.png}}\]

For further particulars about the scale of the *Ti* and *Hsiao*, see Additional Notes B and C.

The *Ti* used at the State services has the ends ornamented with the head and tail of a dragon\(^1\) carved in wood, and, like all the wind instruments for ritual use except the *Shéng*, is coloured scarlet. [see Plate XII.] The length, excluding the head and tail, is 23\(\frac{1}{4}\) inches. *Ts'ai Yu* mentions the gilded dragon's head [f. 24], and condemns the red colouring as intensely vulgar, saying that bamboo

\(^1\) *Lung Tou Ti* 龍頭笛. It is occasionally used at funerals also, but the pipe is then uncoloured, and has the ordinary black bands.
instruments should be made of naturally black bamboo, and wooden instruments covered with black lacquer as the Ch'ın and Shê still are. Flutes, he says, in the Yüan dynasty were coloured green like the *wu t'ung* leaf, with red bands [f. 26]. *Wén Miao Yo Shu* [V. f. 25] shows the Ti without the head or tail, and without the membrane hole or the two lower holes; and the string of both Ti and Hsiao passes through very small holes on opposite sides of the pipe instead of large holes close together underneath. *Lü Lü Chêng I* omits the membrane hole, but has the rest as in the modern Ti tzü. A specimen of the usual proportions, but made of brass and engraved with characters and with a very delicate "hawthorn" pattern, has been seen at Shanghai. Iron flutes are made at Hangchow. A cheap [bamboo] variety is sold in the streets of Shanghai, Peking, and other places.

We gather from *Tsai Yü*, that the Ti was derived from the Ch'iang people, whose Ti had three holes according to the Shuo Wén, and was the same as the sixteenth century *Hêng Ch'üi* 横吹. "From the Han dynasty onwards only popular bands used it, and it did not get into classical music....... Anciently there was no transverse Ti, and in fact it is a foreign instrument" [f. 22]. *Lü Lü Chêng I* says that it came from the North, and was used by cavalry, and again [III. f. 28] quotes from a book of the Sung dynasty: "The transverse Ti¹ is the small Ch'ih; if it has a mouth-piece it is called I Tsui Ti 正嘴笛." *Wén Miao Yo Shu* also, in a long list of Ti, mentions one with a mouth-piece.

¹ The popular transverse Ti [see under 2. (2)] is still called *Hêng Ti* 横笛 in Shantung. This name, spelt Hwang-teih, is applied to the horns Hao T'ung and La Pa in some European books. see Brussels Catalogue, 139, 140.
2. (2) PANG TZÜ TI (PANG TZEU TI) 椴子笛

[Plate III, Fig. 9]. A smaller variety of Ti, named from the fact that it is played with the Pang tzü [I. A. 6. (1)]. The total length is 17.5 inches, the diameter about 0.625 inch, and the centre of the blow hole is 4.5 inches from the end. The lowest note is in unison with the third note of the larger Ti. The connexion of this instrument with the Pang tzü suggests that it belongs properly to the North or North-west of China, but the specimen measured was made at Shanghai. The properly made flutes used in the North, where the bamboo does not grow well, are imported; the smaller popular instruments are often made locally of imported bamboo.' One small shop in Shanghai stated that they exported about fifty flutes daily.

The larger and smaller Ti are sometimes distinguished as male and female, like the "male and female voice" of the clock of Trinity College at Cambridge.

A still smaller popular Ti, about 12 inches long, is sold in Peking and elsewhere in the North. It has generally blow hole, six finger holes, membrane hole and two holes below for the string.

The ancient flutes are clearly distinguished by Tsai Yu [f. 27] as follows:—

"As to the four instruments Kuan, Hsiao, Ye, Ti, they are much alike; only a pipe without holes, blown separately is a Kuan; (several pipes) blown joined together, without holes, form a Hsiao; a pipe (with holes) blown like a Hsiao is a Ye; blown like a Ch'ü, it is a Ti. These four instruments are all about the same in length and thickness. The Ch'ü alone is not the same in size, and the manner of blowing it is different."

With regard to the Kuan, Tsai Yu probably refers only to the most ancient times. The Ėrh Ya distinguishes three
sizes of Kuan; and the name occurs also in Mencius:—

"Now your Majesty is having music here . . . The people hear the noise of your bells and drums, and the notes of your fifes [Kuan] and pipes [Yo], and they all with aching heads knit their brows and say to one another 'That's how our king likes his music!'") A proper musical instrument, rather than a set of separate pitch-pipes, is evidently intended in both places. The Sung illustrations to the Erh Ya show a double pipe very much like the modern Kuan tzü [III. B. a. 1. (1)]. It is possible that Kuan, in the Erh Ya and Mencius, stands for Ti, which the Erh Ya otherwise omits; and the Tzü k'ê t'u shuo says that the Ya Ti 雅笛 was anciently called Kuan. A note to 'Kuan' in the Chou Li says: 'Like the Ti but smaller, two are joined together and so blown.' See Additional Note F.

Flutes now in use seem all to have six finger holes, either, as in the Ti or T'ai P'ing Hsiao, all on one side with a seventh hole covered with membrane, or five on one side and the sixth on the opposite side as in the Hsiao and Chih.

Section B. Reeds.

a.—Double Reeds.

1. (1) KUAN (KOUAN) 管, Plate IV., Figs. 1, 2. A cylindrical pipe of redwood, tipped with bone and fitted with a reed about 3 inches long. There are seven oval finger holes on the upper side and either, one or two underneath. The length is—with nine holes, 8.25 inches;—with eight holes, 7.25 inches; and the diameters of the two varieties, 0.75 inch and 0.5 inch respectively. The reed is kept in shape by a band of brass wire. The Kuan tzü [as it is generally called] is used—but not very commonly—at
weddings and funerals at Shanghai and elsewhere. The name means a pipe or pipes, and was anciently applied to a set of separate pipes without reeds, which gave the notes of the chromatic scale and were used as a standard of pitch.

The scales, taken from the Brussels Catalogue [695, 696], are:

\[\begin{array}{c}
\text{i}
\end{array}\]

\[\begin{array}{c}
\text{ii}
\end{array}\]

i is taken from an instrument like the smaller one above; ii is the scale of a pipe nearly 11 inches long. The lowest note of the larger instrument described above is

At Hangchow the pipes are sometimes made of bamboo either naturally speckled or ornamented with a hot iron. A larger specimen examined was 7\(\frac{1}{2}\) inches long and \(\frac{1}{2}\) inch in diameter; a smaller one, 7\(\frac{1}{2}\) inches long and \(\frac{1}{2}\) inch in diameter. All the instruments seemed to be rather old. Except in the number of finger holes, eight instead of nine, they corresponded exactly with the description of the Pieh Li in K'ang Hsi.

Tsai Yu, in Ling hsing hsiao wu p'u f. 6, gives the larger variety as Tan Kuan 单管 or single pipe [elsewhere as T'ou Kuan 頭管], and two of the smaller, joined together, as Shuang Kuan 雙管 or double pipe; and both to be used
in the lesser ritual of Ling Hsing. The smaller pipes have not bone tips, but otherwise both instruments seem to be identical with the modern Kuan tzŭ, and they are described as then in popular use. Lü-Lü Cheng I includes the T'ou Kuan alone of popular instruments, so that it was probably used in some State service then also. The two varieties are distinguished as Ta Kuan 大管 and Hsiao Kuan 小管, and the instrument is said to have come from the Ch'iang 羌, a tribe bordering on the West of China.

1. (2) PI LI (PI LI) 睦管. The Pekingese sound for the first syllable is Pieh. K'ang Hsi [s.v. 管] quotes the following account: “The pipe made of bamboo, the head ['reed'] of reed,—the same kind of thing as the Hu Chia, but with nine finger holes [竅]. The note is Chiao 角, and the sound mournful [pei 悲]. It is also called Pei Li, and Chia Kuan 箔管. Li 箔 is also written Li 粟.” Ts'ai Yü [f. 12] says that the T'ou Kuan [see above] is the same kind of instrument as the Hu Chia or Pieh Li. The Brussels Catalogue has “695. Kuouan, Kuan-tze ou Pi-li.” The instrument [or certainly the name] is now, to say the least, far from common in some parts of China; but from the above descriptions it was evidently very much like the Kuan tzŭ, except that the pipe was made of bamboo. An old scholar at Hangchow used to recall hearing the Pi Li used in the Examination Hall [貢院] there, for the ceremony vulgarly called Ch'üi Kuei 吹鬼, which does not now take place. He vaguely recalled it as “bamboo above and metal below.” One long note was sounded on it at dusk, for the real purpose, he said, of inducing the Yin Ch'i 陰氣, and was at once followed by the drums and gong of the night watch. See also under Kuan tzŭ [above] and Additional Note F.
It should be added that Giles [s.v. 筮] translates Pi Li “the Tartar horn,” and K‘ang Hsi, under the same word, speaks repeatedly of a horn [角].

1. (3) HU CHIA (HOU KIA) 胡笳. K‘ang Hsi [s.v. 筮] has: “The section of the Shih Chi 史記 [c. B.C. 90] on Music says the Hu Chia is like the Pielh Li, but without holes. In later ages it was used in the train of the Imperial carriage. The Chia made by Po Yang when he fled to Hsi Jung was a rush leaf rolled up and blown . . . .” It is said that at the same temple where the Ku kuai [III. B. b. 1.] is sold, wooden pipes without finger holes and with a reed made of a leaf rolled up are also sold to the pilgrims. Mr. Galpin writes: “This would be a double reed. Tubes of green willow bark slipped off the stem are used for double reeds in the same way in England.”

An instrument called Chia is said to be still made at Peking in the Summer, and was described by a native as a reed or rush coiled up into a pipe.

At the festival of Tuan Wu, when onions are specially eaten, it is said that a similar thing is made by children at Shanghai of the onion leaves. The children in Shantung do this at any time when onions or leeks are available.

The illustration [Plate IV, Fig. 3.] is from Tzü k‘ê t‘u shuo, and though it does not agree with the above description, probably represents some real instrument. Mr. Galpin writes of this that it “reproduces in the Far East the Hornpipe of the Welsh, the Cromorne or Krumhorn of the European nations. It apparently consists of a cylindrical tube pierced with three holes terminated at the lower end with a natural horn and having at the upper end a double reed [similar to that used in the Kuan tzü] covered with a cap. The instrument is blown through a small orifice in the top of the cap. I can hardly believe that this is not a picture of a
A medieval European instrument which had found its way out to China. A fine Stradivarius violin was discovered in the Celestial Empire, and in the Berlin Ethnographical Museum there is a specimen of a Rackett or Sausage Bassoon grouped with the Chinese instruments, but made in Europe in the sixteenth or early seventeenth century. The principle of the 'covered' reed is found in India, but only, I believe, with the single reed. The European Krumhorn had a double reed."

2. HUA CHIAO (HOUA KIO) 花角. An instrument of this name seems, if it is not still in use, to have only lately become obsolete; but it is hard to make out quite what it was. At Hangchow it is said to have been the same as the Pi Li. Dennys calls it 'a military brass instrument,' giving an alternative name, Wu T'ung Chiao 椒桐角, which suggests wood¹. Tsai Yu [Vol. VI. f. 19.] arguing that certain ancient music cannot have been purely instrumental, says that words were sung even to the three note scale² of the Hua Chiao, an instrument which would not produce a complete scale. The picture book Tui hsian tsu tzü has a drawing of the Hua Chiao [Plate IV., Fig. 4.] on which Mr. Galpin writes: "The illustration is intensely interesting. It shows a covered reed applied to the resonator form of instrument we find in the Hsianan. The neck-like part is the blowing tube;—inside is the double reed [apparently the artist has tried to show it]: at the lower end of the globular resonator are three large finger holes. I have made a rough model of this instrument, of course with no definite scale to guide me. The instrument gave the following series of notes with a Kuan tzü reed:—all holes closed—nothing; one hole

¹ Wu T'ung is the name of a tree.
² 三弄之曲. Chinese scholars seem to be very uncertain what this phrase, which is well known, really means.
I do not know of any instance of the reed [either double or single] applied to a globular resonator." It will be noted that the somewhat vague recollection at Hangchow of the likeness of the Hua Chiao to the Pi Li, which certainly had a double reed, and Tsai Yu with his reliable evidence as to the scale of the Hua Chiao, both tend to confirm Mr. Galpin's very interesting interpretation of this at first sight unpromising illustration.

3. (1) SO NA (SOUO NA) 南管. A conical pipe of redwood fitted with a brass mouth-piece to which a loose disc is attached by a chain, and with a moveable brass and copper bell. A small straw reed bound round the middle with copper wire is put on to the mouth-piece. There are seven finger holes on the upper side and one underneath. The total length is 17.75 inches; the length of the mouth-piece, 2.5 inches; of the pipe, 10 inches. The external diameter of the pipe is 0.5 to 1 inch; of the bell, 3.375 inches. The scale is:

```
\text{\begin{align*}
& \text{\textbf{F}} \\
& \text{\textbf{G}} \\
& \text{\textbf{A}} \\
& \text{\textbf{B}} \\
& \text{\textbf{C}} \\
& \text{\textbf{D}} \\
& \text{\textbf{E}} \\
& \text{\textbf{F}} \\
\end{align*}}
```

It is a common instrument almost invariably used at funerals at Peking, Shanghai, and many other places. At Peking the So Na is regularly made of two sizes, the larger being about 19 inches long; and an old and ornamented specimen seen there was about 23 inches long. At Tai An, in Shantung, specimens made wholly of brass and copper may be obtained. The Shantung name is Wa Wa erh.

The similarity of sound between So Na and Zourna, the name of a Persian oboe, is pointed out by M. Mahillon [Brussels Cat. 697], and the description of the Zourna
<p>[Engel p. 167] would do quite as well for the So Na except that the former has not the brass bell.</p>

3. (2) CHI NA (KI NA) 嘈吰. This is a smaller variety of the So Na. At Peking and perhaps in the South, but not about Shanghai, it is called <i>K'ai Ti</i> 凯笛. The total length is 11.25 inches; the bell is 2.5 inches long and 3 inches across the mouth. A specimen at South Kensington [Engel p. 184] has nine finger holes instead of eight which is the usual number at Shanghai.

A specimen from Hainan [Plate IV., Fig. 5.] is 10.5 inches long; the mouth-piece, made of horn, about 2 inches long and with the disc fixed. The pipe and moveable bell are both of some hard wood with ornamental grain. The bell is made in three pieces, and is 2 inches long and 2.75 inches in diameter. The interior diameter of the pipe varies from 0.0625 to 0.75 inch. There are eight finger holes apparently bored with a hot iron. The local name for the instrument is <i>Ti tzü</i> 笛子.

The names So Na, a meaningless transliteration, and <i>Ti</i>, borrowed from the flute, both suggest a foreign origin for these instruments.

b.—Free Reeds.

1. KU KUAI (<i>KOU KOUAI</i>) 古怪. A toy which is sold or given every Spring to pilgrims to the <i>Mao Shan</i> 茅山, a hill south-east of Nanking. It consists of a drum of bamboo about 1.125 inch high and 1.75 inch in diameter. Both ends are covered with pieces of bamboo and there is a partition in the middle. In the centre of each end a small free reed tongue is cut. Two little bamboo pipes are put

<sup>1</sup> Another southern name is perhaps <i>Hsiang Ti</i> 聲笛, which appears as <i>Heang-teih</i> in some European works.—see, e.g. Brussels Catalogue 119.
into the side as mouth-pieces and the reeds can be sounded either by suction or by blowing. Two different notes are produced. [see Plate VII.]

A similar thing [called Shéng tzii. 笙子] is sold to pilgrims at T'ai An. Here the reeds are inserted into the sides of short bamboo pipes. Two pipes are fastened side by side, or the reeds are put at the two ends of a single longer pipe, which has a division in the middle. Each reed has a blowing tube, like those of the Ku Kuai, let into the side of the pipe.

These toys are interesting as preserving perhaps the original form of the free reed.

2. (1) SHÉNG (CHENG) 笙. A small hand-organ, composed of bamboo pipes with free reeds, fitted into the top of a wooden air-chamber which has a mouth-piece at one side. A detailed account of an ordinary specimen made at Shanghai in 1900 or 1901 follows, and will probably apply on the whole to those made in other parts of China. [see Plate XII.]

a. The Air-chamber [Shéng Tou 笙斗 or P‘ao 鞭] is of wu-tüng wood scented with camphor and lacquered black; circular, with convex sides. The top is made of hardwood. The diameter at the top is 2 ½ inches, at the bottom 1 ½ inch, the height is 2 ⅞ inches. The sides and top are about ½ inch thick. A round piece of ivory, ¼ inch in diameter, is let into the bottom, perforated with five holes. There is a horizontal partition ⅝ inch thick half way between the top and bottom. On the middle of this partition stands a solid drum of wood about 1 inch in diameter, reaching to the top and leaving a passage of ⅛ inch round itself for the air. The air-chamber is sometimes made of redwood polished.

b. The Mouth-piece [Chou 啖 or Tsui 嘴] is of wood, 1 ¾ inch long. The height at the inner end is 1 inch, at the outer end, 1 ¼ inch, the greatest width is ¾ inch. The lower side
is straight and level, the upper side curves so that the highest point is nearly level with the top of the air-chamber. The outer end is covered with a piece of ivory, egg-shaped and with concave surface, \( \frac{3}{4} \) inch thick at the sides, with a hole \( \frac{1}{4} \) inch high and \( \frac{1}{4} \) inch wide below, growing narrower towards the top.

c. The Pipes \([Hsiu Chua 修頌 or Kuan 管]\), seventeen in number, stand in holes round the top of the air-chamber, touching each other except in one place where there is a gap of about \( \frac{1}{4} \) inch. They are kept together by a band of horn, level with the tops of the shortest pipes. Each pipe is of black bamboo with a tapering foot of hardwood about \( 1\frac{1}{4} \) inch long. Nearly half of this foot is visible above the air-chamber. At the lower end half the thickness of the foot is cut away for the length of \( \frac{3}{4} \) inch, and the part of the central cavity thus exposed is covered with a very thin brass reed \([Huang 箫]\). The tongue of the reed is \( \frac{3}{4} \) inch long and \( \frac{1}{4} \) inch wide. It points upwards and has a little spot of wax stuck to it near the free upper end. The pipes are arranged so that all the reeds face the side of the air-chamber. Each sounding pipe has a long narrow slit on the inner side, and a circular finger hole near the lower end. The finger hole must be closed to make the pipe speak. The measurements of the pipe for the lowest note \( Ho [A] \) are:—total length, 11\( \frac{3}{4} \) inches; external diameter, \( \frac{3}{4} \) inch; internal diameter, \( \frac{3}{2} \) inch. Length from top of the reed to bottom of the narrow slit, 9\( \frac{7}{4} \) inches. This last measurement, for the pipe which gives \( Ch'\acute{e} [E] \) is 6\( \frac{3}{4} \) inches, and for the \( Lin [A] \) pipe, 41\( \frac{3}{4} \) inches. The lengths of the pipes, measured from the top of the air-chamber, are as follows:—three pipes \([of which two are dumb]\) of 5 inches, four \([of which one is dumb]\) of

\(^1\) The diameters of all the pipes are nearly the same.
7 inches, four [of which one is dumb] of 8½ inches, four of 10½ inches, two of 13½ inches. The dumb pipes have no reed or finger hole.

The Shéng is now tuned to the Ti tzü. Each pipe has commonly a red label bearing the name of its proper note and the notes which should be played simultaneously with it. In the table below the pipes are numbered consecutively, beginning at the left hand side of the gap in their circle.

<table>
<thead>
<tr>
<th>Pipe</th>
<th>Proper Note</th>
<th>Approximate equivalent</th>
<th>To be accompanied with</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Ho</td>
<td>A</td>
<td>3. F sharp</td>
</tr>
<tr>
<td>7</td>
<td>Sūh</td>
<td>B</td>
<td>11. B 8ve</td>
</tr>
<tr>
<td>5</td>
<td>I</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Shang</td>
<td>D</td>
<td>13. D 8ve</td>
</tr>
<tr>
<td>8</td>
<td>Chê</td>
<td>K</td>
<td>15. A</td>
</tr>
<tr>
<td>4</td>
<td>Chê</td>
<td>K</td>
<td>15. A</td>
</tr>
<tr>
<td>3</td>
<td>Kung</td>
<td>F sharp</td>
<td>7, 11. B, B 8ve</td>
</tr>
<tr>
<td>6</td>
<td>Fan</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Fan</td>
<td>G sharp</td>
<td>10. C sharp</td>
</tr>
<tr>
<td>12</td>
<td>Liu</td>
<td>A</td>
<td>14, 15. D, A</td>
</tr>
<tr>
<td>11</td>
<td>Wu</td>
<td>B</td>
<td>8, 7. E, B</td>
</tr>
<tr>
<td>10</td>
<td>I</td>
<td>C sharp</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Shang</td>
<td>D</td>
<td>6. G</td>
</tr>
</tbody>
</table>

The finger holes of 3 and 4 are on the inside of the pipes and are covered with the first finger of the right hand.

It will be seen in the above table that the European scale begins on Shang [D]. G sharp is possibly a mistake. Mr. Hermann Smith¹ gives the second pipe slightly flat as compared with the sixth, and suggests that it is so tuned in order to give a perfect fourth with the tenth pipe. In the instrument here described the second and tenth pipes are both raised a semitone as compared with the notes given by Mr. Smith. Compare Additional Notes A. B. C.

¹ The World's Earliest Music pp. 203—5, etc. This book, which I first saw after my own notes were written, contains far the best account of the Shéng that I am acquainted with.
Lā Lù Chéng I gives the above notes, but with no C sharp, and with E repeated an octave higher. Wén Miao Yo Shù has the chromatic scale with the notes arranged so that the longest pipe gives the lowest note and so on. In modern instruments the notes seem to be arranged perhaps [as in the ancient instrument] to suit the fingers, and certainly without regard to the apparent length of the pipes. The slits on the inner side of the pipes are certainly designed to regulate the pitch of the notes.

Gentle blowing makes several reeds sound together, whether, in most cases ¹, the finger holes are open or closed; as one blows harder other reeds sound, but with very hard blowing the pipes will speak only if the holes are closed, when each gives, as a rule, the same note as would be produced by suction. There can be no doubt, however, that the right way to sound the instrument is by suction, though the performer may possibly blow also to get certain effects. The only primitive instrument outside China sounded in this way seems to be the Mexican Acocotl or Clarín—a single pipe about 8 feet long [Engel p. 73]. The suction principle distinguishes the modern American reed organ from the harmonium. The free reed used in these instruments was copied from the Shēng in the eighteenth century, and had been unknown in Europe before that time.

Besides small variations there seem to be two recognized sizes of Shēng. The Brussels Museum has a specimen about 3½ inches longer than the one described above. The small kind seems to be the only one known at Shanghai, and the larger is found at Peking. Those used by the Lamas from Peking [III. C. 2. (4)] seemed to be considerably larger than the common Shēng, and had also the old-fashioned coffee-pot

¹ Some of the reeds give their proper note thus only when the finger hole is open.
spout mouth-piece, perhaps made of pewter, which is now rarely seen. A manual published in 1872 names and gives drawing of the larger and smaller Shéng, and shows the old mouth-piece—apparently fitted into one of the modern shape. The instruments used in the Confucian temple at Hangchow and dated 1870 have only the modern mouth-piece. A Shéng in the South Kensington Museum [Engel p. 188] is said to have the following scale:

\[
\begin{align*}
\text{\textcopyright} & \\
\end{align*}
\]

Compare Brussels Catalogue 137.

A specimen seen at T'ai An in 1906 was noticeably larger than the usual size, the total length being about 2 feet, and the diameter of the pipes nearly \( \frac{3}{4} \) inch. The instrument had these peculiarities—of the seventeen pipes all had finger holes and only three [1, 16, 17] were dumb; the top of the air-chamber was covered with a brass-plate, and there was no hole in the underside; the mouth-piece was long and only slightly curved. There was no opportunity of taking accurate measurements or testing the scale.

What follows is taken from Ts'ai Ya's "Introduction to the Gourd Sound" [f. 28]. In prehistoric times, when learning was scarce and manufactures rude, P'tao, the round gourd, was used to make the larger and smaller Shéng, Hu 壺, the bottle gourd, was used to put wine or medicine in. But the Princes of the Three Dynasties encouraged learning and handicrafts; and glue, varnish, horn, and wood took the place of the round gourd; gold and tin of the bottle gourd;

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1 皇朝祭器樂舞錄
2 See p. 75, Note 1.
3 金錫
and there can be no doubt that the wooden body of the Shény dates from the Three Dynasties, although it retains its old name of Gourd. "It is clear that when [the ancients] speak of the P'ao, they mean what we now call Shény Tou, and it is right to call it P'ao, but a mistake to call it Tou. The substitution of wood for a gourd is extremely good, and its origin also is remote. It cannot have been done but by the sages of the Three Dynasties. . . . I hear that the cave-dwelling Man 瓈 still use gourds for the bodies of their Shény. . . . The second way [to make a Shény] is to take t'ung wood, because it is light, and carve and fashion a gourd-shaped body, and to take tsao 莽 wood, because it is hard, and bore holes in it, to make the top face of the 'gourd'; in the middle make it solid like the common Shény; if it is not solid you waste breath and it is hard to blow [吹]. Outside the 'gourd' fix the mouth-piece which is called the beak [chou], in shape like the neck of a goose, and varnish the whole black." The classical differs from the common Shény in having the circle of pipes like a ring without break, and all the holes face outwards. "The difference from the common Shény consists" Ts'ai Yu himself says "only in the gourd shape [i.e. globular], and the notes are not the same: . . ."

From this Introduction it appears that the common Shény of the sixteenth century was practically identical with the modern instrument in the shape—elongated, not round like a gourd—and solid core of the air-chamber; and in the number and arrangement of the pipes—seventeen, with a gap in the ring and two holes facing inwards. The notes were "not the same" as the chromatic scale of the classical Shény, and may have been those of the modern. On the other hand the words 'seventeen reed Shény' and the absence of allusion to dumb pipes may show that all the pipes had reeds. Wên Miao Yo
Shu has organs both with seventeen and with thirteen reeds. The remarkable difference between the modern mouth-piece and that described is not mentioned, so that it is possible that the present shape had not been introduced. The old form is clearly drawn in Ch'üeh Li Tsuan Yao. There is no reference to the horizontal division of the air-chamber, or to the opening underneath in either the classical or the common Shêng. [see Additional Note F.]

The Musical Annals of the Yüan History say that the Shêng introduced from Mohammedan lands at the time of the universal union [i.e. under Kublai Khan] had bamboo reeds [Ts'ai Yü f. 35]. Arabian and Persian instruments do not seem to include anything like the Shêng. The Indian Poongi, a gourd with a horn mouth-piece and two pipes with bamboo reeds [Engel p. 166], may possibly be the instrument to which the book refers.

The Shêng is now used in the State services, and occasionally at funerals [II. A. 2. (2)], as well as by amateurs. In the Hung Lou Mêng it is mentioned among other instruments commonly used in keeping up the feast in the eighth month. When played it is held with the pipes nearly horizontal and pointing to the performers right. It is said that men who play the Shêng die early of consumption.

2. (2) LIU SHÊNG (LIOU CHENG) 六笙. “There were thirty-six bands, six instruments to one band, and six sounds to one instrument. These instruments are constructed with bamboo pipes having brass reeds. The largest sized instrument is made of the trunk of a tree hollowed out. A bamboo pipe 14 feet long with reed and mouth-piece is placed in the hollowed tree trunk. No. 2 instrument has three pipes 14 feet long. No. 3 to No. 1 [? 6] have six pipes and reeds respectively, but each shorter than the other.” The above is taken from a description of the seventh-moon festival of the

The reed is not described, but the instrument is said to represent the Shêng in its most primitive condition [Engel p. 187], so that the reed is probably like that of the Shêng. Engel also says that the instrument has a mouth-piece at right angles to the pipes.

Garnier's Voyage d'Exploration en Indo-Chine [p. 345] describes the Khen [also called Phun] as an instrument peculiar to Laos; composed of from ten to sixteen bamboo pipes arranged in gradually increasing length, tied together in pairs and joined transversely by a larger bamboo. This is provided with a mouth-piece and communicates with the pipes by means of holes which can be closed with the fingers. It produces consequently as many notes as there are holes closed. They are made of all sizes from 3 to 12 feet. The Khen is commonly played with a fife or hautboy called Clui.

c.—Single Reeds.

1. CH'ÜN KUAN (T'CH'OUENN KOUAN) 春管 or, more commonly, LA PA (LA PA) 喇叭, Plate IV, Fig. 6. A bamboo tube 5.625 inches long and about 0.5 inch in diameter, with six finger holes. Into the top of the tube is fitted a mouth-piece of bamboo, 1.5 inch long and 0.25 inch in diameter, closed at the end and with one side flattened. This flat side is cut so as to make a passage for the air and to form a single external reed. The scale is:—
It is used and sold by itinerant toy-sellers at Hangchow, Shanghai, Peking, and elsewhere; and it is perhaps worth noticing how entirely it is regarded as a child's toy, only the larger forms at Peking being ever, as far as has been observed, included in the stock of the men who sell cheap flutes and whistles in the streets. Large quantities are made in the precincts of the City Temple at Shanghai. Two pipes are sometimes joined together as for instance in Shantung, where they are called Tui Hsiao 對簫. Larger specimens are made at Peking, and the reed is often cut in the pipe instead of in a separate mouth-piece. Some specimens have a seventh hole covered with membrane. The length is about 10 inches, but the size is subject to much variation. The name at Peking is Kuan tzä 管子.

A common toy is made of a pipe of reed or bamboo a few inches long, with the end cut obliquely and slightly split. Into this split is put a small piece of dry leaf to act as a vibrating reed. One or more of these is attached to a toy of some form—very often the wind coming through the pipe is made to spin little globes of brightly coloured paper; or they are fixed to sticks which carry sugar figures of various birds or animals.

2. LA PA 唢吶. At Peking the little pipe with leaf reed last described is sometimes put into the top of a conical clay pipe about 4 inches long.

d.—Mechanically Blown.

Reeds formed of a leaf or of thin paper vibrating on the end of a small tube are put inside clay figures of cocks, frogs, rabbits, etc. etc. which are provided with bellows made of stout paper. The reed is like that described under c. 1. and 2. above. These toys are common at Hangchow, Peking, and in Shantung, and probably elsewhere.
The Ribbon Reed, that is a piece of skin or thin leaf put between the lips and so set in vibration by the breath, is not unknown to Chinese schoolboys. Mr. Galpin writes: “I do not think it is used in the East in any really musical capacity. The American West Coast Indians have it in rather an elaborate form.” See also under Hu Chia above, and Additional Note F.

Section C. Cup-mouth-pieces.

1. HAI LO (HAI LOUO) 海螺. A Conch. The small end of the shell is broken off to form a mouth-piece. The shell is left just as it comes from the sea and of course varies in size, the average length being perhaps 12 or 14 inches. In the north shells of more various shape and colour are used instead of the plain white shells which are usually seen about Shanghai. The conch is commonly used by boatmen in Chekiang and in the neighbourhood of Shanghai; and it is said to be used by the priests of the Buddhist sect called Ying Fo, and by Lamas. See under Kang T'ou below, and Additional Note F.

2. (1) HAO T'UNG (HAO T'OUNG) 號筒. A brass, or copper [Van Aalst], instrument with one sliding tube. It is used at funerals and also, according to Van Aalst, for military purposes. The ordinary length is about 36 inches. The mouth-piece is a flat disc or cup. The following is the description of a brass Hao T'ung from Peking:—A straight-sided ‘bell’ 12 inches long and 4.625 to 3.5 inches in diameter: to the flat top of this is fitted a conical pipe, 5.75 inches long and 1.75 to 0.875 inch in diameter, with a bulb 0.5 inch from the top, 2.25 inches in diameter: into this fits a sliding conical tube 17.5 inches long and 0.875 to 0.375 inch in diameter. The mouth-piece
is hemispherical with a flat rim, 1.875 inch in diameter. The total length is 34.375 inches. [see Plate IX.]

This is the only form of Hao T'ung known about Hangchow and Shanghai, though larger specimens about 4 feet long may be seen at Hangchow. But the commoner instrument at Peking is a far larger thing and slightly different in shape. The 'bell' is larger in proportion than in the specimen described above, and has a rounded top. From inquiries made at Peking it seems that the 'bell' is sometimes made of wood and sometimes of iron—in both cases with brass hoops—but that good instruments are made entirely of brass. In any case the inside of the bell is coloured red, and the outside is gilded, or sometimes red with gilt ornament, and the sliding tube is usually red. The measurements of a larger specimen are:—bell, 30 inches long, 16 inches across the mouth; tube fixed to the top of the bell, 12 inches long—the bulb on this tube may be in the middle or at the top of the tube; sliding tube, 42 inches long. A pair of these is always used at funerals in Peking, being hired for the purpose from the undertakers. They are played stationary, with the bell resting on the ground. When the procession moves the performer slings his instrument across his back.

The curious 'bell' of this instrument seems to have the effect of diminishing the number of notes which the conical tube would naturally produce [Brussels Catalogue, 139].

2. (2) LA PA (LA PA) 剌 叼. A brass horn with one or two sliding tubes. It is properly a military instrument and may constantly be seen in pairs in front of a body of soldiers, or at city gates, or wherever soldiers are posted. At Hangchow the fire brigades blow the La Pa as they come back through the streets after putting out a fire. In the
theatre the end of each piece is marked by a few notes on the 
La Pa, and the practice has given rise to the metaphorical 
expression in Peking ch'ui t'ai 吹台 'the La Pa' is 
blown'—meaning 'it is all over,' 'there's an end of that'. 
At Peking itinerant knife-grinders use a small La Pa about 
30 inches long, round the thin end of which they wind string 
till it is about an inch thick. It is said that their instruments 
as well as those used on the stage or at funerals are commonly 
called ch'ien t'ai 箕子, while the military instrument may be 
called Hao 号. There are several different sizes of La Pa. 
One with two slides is 44 inches long and 5.5 inches across 
the bell [Engel p. 185]. Larger specimens commonly used 
by soldiers, with only one slide, are about 5 feet long and 
12 inches across the bell. An incomplete instrument has been 
seen at Hangchow which would not have been more than 
about 15 inches long when perfect. The bell of the La Pa is 
more like that of an European instrument. The La Pa has 
usually, in common with the Hao T'ung and Cha chiao, a 
bulb near the top of the lower joint, designed apparently 
to help to keep the mouth-piece pressed against the lips. Of 
these bulbs M. Mahillon writes: Depuis le commencement 
du XVe siècle, [voir le tableau représentant le Couronnement 
de la Vierge de Fra Angelico, au Musée du Louvre à Paris], 
nos anciennes trompettes sont toutes munies d'une boule 
semblable; il serait intéressant de savoir si l'idée appartient 
à l'Asie ou à l'Europe [Brussels Cat. 743]. The sliding 
tubes of these instruments are not meant to change their 
notes, but to reduce their length when they are not in use. 
The notes are in the relation of—

\[ \text{Van Aalst} \]
Shops entirely devoted to the making of these horns are found at Soochow, a place noted for the manufacture of brass instruments. [see Plate IX.]

La Pa represents the Mongolian word Rapal [Giles, s.v. 喇].

2. (3) CHA CHIAO (TCHA KIO) 札角 [see Plate IX]. A horn like the La Pa, except that the lower tube is curved so that the bell faces the performer. Van Aalst, who is my sole authority for the above name, writes: "It is of various sizes, and is used at weddingprocessions." At Shanghai it is also used at funerals, the performers being sometimes mounted on horse-back. At Hangchow, Shanghai, and Peking it is commonly called La Pa; at Hangchow it is also called Wan Hao T‘ou 萬號頭; and in Shantung Hao 號. At Peking it is said to be used at funerals and weddings; it is generally gilded and sometimes bound round with red cloth; larger specimens are about 6 feet long measured straight. At T’ai An specimens about 3 feet long are made with two bells, the curved part of the tube being gradually flattened and then divided into two tubes, each division ending in a small bell.

The above three horns are all plainly depicted in the frescoes of the great temple (Tai Miao 隨廟) at T’ai An, which date, according to the priests, from the sixteenth, seventeenth, or eighteenth century.

2. (4) KANG T‘OU or TA WANG. A conical bronze [or brass] horn with one slide. The total length is about 10 feet. The lower half is more or less ornamented. A pair of these instruments were seen in the band of the great Lama Temple [Yung Ho Kung] of Peking in March 1900. They were used in a funeral procession, the lower end being carried in a sling by an attendant. The note produced was very deep and gruff. The names are uncertain.
An account of the Embassy to the Court of the Teshoo Lama in Tibet [London, 1800] says:—"First were ten persons with huge trumpets, which they sounded resting one end upon the ground; next followed twenty men with large tabors, a sort of drum about 3 feet in diameter, fixed by the side upon a pedestal and beaten by a long elastic curved iron; then came twenty men with cymbals, and two with the sea-shell." [Engel p. 134].

The instruments used by the Peking Lamas on the occasion referred to were—besides these horns—drums, cymbals, smaller curved horns, flutes, and organs.

3. HAO (HAO) 鳴. A horn distinguished from the La Pa only by the curious flattened mouth-piece. It is fairly common at T'ai An in Shantung, where it is distinguished from the La Pa neither by its name [Hao] or uses, but I have not seen it elsewhere, though it is very unlikely that the specimens mentioned below came from T'ai An. The following is the Rev. F. W. Galpin's description of a specimen in his possession:—"Length of tube including bell, 3 feet 5 inches. One slide and ball-knob half way along the tube. The mouth-piece, which is the most interesting part, is narrowly oval being 8 inch in width and only 4 inch at its greatest breadth. The cavity is 1 inch. The tube is ½ inch in diameter at the mouth-piece and is very slightly conical for more than half its length: at the widening of the bell it is 1 ¼ inch: the bell is 5 ½ inches across. I have obtained the following series of notes:—

\[\text{\textcopyright Island of the Blue Planet, 1957}\]

The form of mouth-piece shows a close affinity to the Double Reed principle." Mr. Galpin's specimen is called
Ah tu, a name which stands perhaps, in a southern dialect, for Hao t'ou. A similar instrument exists at Brussels [Catalogue, 741]. In the T'ai An instruments the upper edge of the mouth-piece seen in profile has a considerable curve, low in the middle and higher at the two ends. [see Plate IX].

4. KANG TUNG (KANG TOUNG) 千動. A curved horn of copper with brass rim and ornament, made to resemble a dragon with open mouth. The length is 16 inches measured straight; the apparent diameter 3 inches to 1 inch. There is a short internal tube of small diameter hidden inside the upper part adjoining the mouth-piece. The outer tube is made in two pieces, and the joint is covered by the brass dragon's head. Mr. Galpin writes:—"It is not capable of producing the natural series of harmonics, but any notes formed in the inner tube by the pressure of the lips are intensified by the bell-like extension of the outer tube. This curious principle, which enables the performer to produce every note in the octave, is found in some of the mediæval European horns. See Brussels Catalogue, 1164."

It is said to be used in Peking in processions and by the Lamas, and it may perhaps be a Mongolian instrument. A specimen made of silver is said to have been seen in a temple in Mongolia. The characters given at Peking for the name do not seem to represent the sound correctly. [see Plate XII.]

5. In the glass-blowing district of Shantung numbers of glass horns are sold as toys and for keeping up the New Year. Two specimens measured at T'ai An were 45 inches long, 0.25 to 0.625 inch in diameter, 1.875 inch across the bell; and 30 inches long, 0.25 to 0.5 inch in diameter, and 1.75 inch across the bell respectively. The longer specimen had the mouth-piece broken off, the shorter had a cup shaped mouth-piece. This difference was evidently intentional, as all the longer
instruments ended in a rough broken edge and were bought and sold without any notion that they were defective; whereas a short horn minus mouth-piece was discarded at once. The tube which is slightly conical, in most cases diminishes again in diameter near the bell, owing probably to the drawing of the glass. In some specimens the bell is replaced by a bulb with quite a small opening. The longer forms give a great number of harmonics. They were found to produce clearer notes when sounded by suction, but the common native method of playing them is by blowing. [see Plate IX.]

KU [KU] TANG (KOU [KOU] TANG) 鼓噛. A very popular toy made in the glass-blowing district of Shantung. It is a flat glass bulb, from 2 to 6 inches in diameter, with a thin tube from the middle of one side for mouth-piece, the whole thing being rather like a wine decanter. The tube is put into the performer's mouth, and the bottom, which is extremely thin, is made to vibrate with a loud crackling noise by drawing the breath quickly in and out.

Since writing the above I have visited Po Shan and seen these horns made. The makers declared that the longer variety would not speak properly with a mouth-piece.
CLASS IV. Stringed Instruments.

Section A. Air-vibrated.

1. (1) FÉNG CHÉNG (FOUNG TCHENG) 風箏. Wind Harp. This is a bow made entirely of bamboo. The string is a very thin slip of bamboo about \( \frac{1}{2} \) inch wide with a small piece left thick at each end to catch in notches which are cut in the end of the bow; and this is a piece of whole bamboo 2 or 3 feet long. It is tied to the frame of a paper kite so that the string will catch the wind just above the head of the kite. These bows are made at Hangchow. They are also called Fēng Ch‘in 風琴. The name Fēng Chéng was formerly applied to the bells which hang from the eaves of Temples [Ch‘i Hsiu Sect. 22]. K‘ang Hsi [s.v. Ch‘eng] quotes a rather obscure sentence which may refer to this instrument, and if so takes it back at least to the T‘ang dynasty.

1. (2) YAO P‘IEN (IAO P‘IEN) 鴞片. A bow used like the last. It is strung with narrow ribbon and has a sort of cylindrical bridge below the notch at either end of the bow, which is a very rough piece of bamboo about 5 feet long. It is made at Shanghai and commonly used there in the Spring.

2. YAO CH‘IN (IAO K‘IN) 鶴琴. A Kite Harp made in Shanghai. It consists of a frame of light bamboo bent into the shape of a bottle gourd, with seven straight bamboos fastened across it. On each of these cross-pieces is stretched a narrow ribbon fastened at either end to a rough tuning peg. The thing is hung to the string of a large paper kite, and the seven ribbon 'strings' make a loud humming sound which may be heard at a great distance. [Plate X.]
There are said to be many other varieties of kite bows and harps at Peking and Nanking, where kite-flying is carried on every Spring with the utmost enthusiasm.

The only air-vibrated instrument known in Europe is the AEolian Harp.

Section B. Hand-controlled.

a.—Plucked strings.

§.—Without a neck.

1. CH'IN (K'IN) 琴. A horizontal psaltery consisting of a sound board of curved section with a raised ridge near the tail or broader end, and closed below with a flat board in which are usually two round or oblong openings. The curved board is about ¼ inch thick down the middle, but considerably thinner on either side; the flat board is about ⅜ inch thick. The wood should be wu t'ung lacquered black or brown, but for modern instruments Shan (cunninghamia sinensis) is commonly used. The head and the ridge are made of some hard wood. There are seven silk strings tied to two jade or wooden pegs which are fixed to the under surface near the upper end. From these pegs the strings are brought up over the head and stretched along the sound board, each ending in a bow knot above the raised ridge. Over the knots are passed loops of silk which come up through seven holes in the tail of the instrument and are fixed into loose pegs or knobs of jade or hardwood. When these pegs are turned, the silk loops being twisted grow shorter and so tighten the strings. This method of tuning appears to be unique; although an analogous principle has been applied to the piano by Brinsmead. Along one side of the sound board are inlaid thirteen studs [Hui 徽] of different sizes marking the places where the strings may be stopped. They should be nails of gold from Li Shui [麗水]
in Chekiang, but are commonly circles of mother o’ pearl. M. V. C. Mahillon has found that by stopping a string at these thirteen points in succession the following notes are got:

\begin{center}
\[ \text{\includegraphics[width=0.5\textwidth]{chinese_musical_instruments.png}} \]
\end{center}

And he shows that the exact intervals differ perceptibly from those of the theoretic Chinese scale. [Brussels Cat. 759]

A comparison of these notes with those given by Tsai Yü shows that the Ch’in has not been materially changed since the sixteenth century. It is curious that the only note marked outside the diatonic scale is the minor third, and that in the two upper octaves the notes are those of the common chord.

The Ch’in is probably of immense antiquity, and is justly regarded with considerable respect. Traditionally it had at first only five strings, but Tsai Yü says that the ‘five stringed Ch’in’ was merely the seven stringed instrument tuned to the five-note scale, and that the strings known as Wên and Wu were so named from their tones, soft and brilliant respectively, and not because they were added by King Wên and King Wu [Amiot]. For information about the tuning and playing of the Ch’in and the peculiar notation employed see Vol. XXXIII, p. 149 of this Journal, and the books of Amiot, Van Aalst, and others. Mr. G. T. Lay wrote in the Chinese Repository [Vol. VIII, p. 41]: “Dr. Young, who subjected a vibrating string to a microscope for the purpose of getting some practical hints as to the nature of the harmonic chord, observed that it was a sort of spiral or trochoidal movement; and its form, and of course the quality of its sound, depended upon the manner in which the force was applied to it. The Chinese were in possession of this fact ages ago, inasmuch as they directed the right hand to be
thrown into almost as many positions as it is capable of receiving. The value of these rules may be easily illustrated by experiment.”

The Ch’in is used at the State services, and is said to have been so used since the days of Fu Hsi, the founder of Chinese civilization. It has also been, and perhaps still is, a popular instrument with amateurs of the educated class. Most instrument makers keep one or two Ch’in in stock, and old specimens are comparatively common. The instruments generally seen correspond very nearly with Tsai Yu’s middle-sized Ch’in. Plate V. shows a specimen which is dated 1790 and was made at Soochow. The names of the parts are taken from K’ang Hsi: a, ‘head,’ shou 首; b, ‘tail,’ wei 尾; c, ‘dragon lips,’ lung ch’un 龍唇; d, ‘phoenix feet,’ fèng tsu 凤足; e, ‘waist,’ yao 腰, called the ‘fair woman,’ mei nü 美女; f, ‘shoulder,’ chien 肩; g, ‘sound holes,’ yüeh 越, the longer called lung ch’ih 龍池, the shorter fèng chao 凤沼; h, ‘narrow ridge,’ lin yüeh 嶽屘; i, ‘higher ridge,’ yüeh shan 畲山; k, ‘city road,’ ch’eng lu 城路, i.e. a slightly raised strip outside the yüeh shan; l, ‘wild goose feet,’ yen tsu 腑足. The upper side is called the ‘belly,’ fu 腹, the under side the ‘back,’ pei 背, or the ‘fairy,’ hsien jen 仙人, and the tuning pegs are called chén 輪. Tsai Yu, more naturally, calls the broader end the head and the narrower the tail.

2. SHÉ (CHE) 瑟. A horizontal psaltery, curved above and flat below. The upper part is a frame of camphor wood with three divisions, into which are fitted three panels of wu t‘ung wood forming the head, body, and tail of the instrument. The head and body should be in the same straight line, the tail [as now the head also is1] being bent

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1 Two old Shé are preserved in the Confucian temple of Ping-yin in Shantung, which have the head correctly in a straight line with the body. Their measurements are:—length, of head, 9 inches; body, 69 inches; tail, 16 inches: width of head, 21 inches. Their colour was apparently scarlet.
downwards. At either end of the body is a raised ridge about 1 inch high and a row of twenty-five small holes. There are twenty-five silk strings all of the same thickness and sometimes coloured red. Each string is put through one of the holes by the ridge at the head and secured inside with a knot; it is then stretched along the body and tail and returned round the end, and entering the sound box through a large hole in the underside of the tail is brought up again through one of the small holes near the lower ridge. Here it is tied round the part of the string which has already passed over the hole, bringing it close down to the board, and the end is finished off in an elaborate knot on top of the ridge. Each string should have also a moveable bridge, but now the Shé is tuned to the five note scale and only the first ten strings are used or provided with bridges. Until perhaps the present dynasty it was tuned to the chromatic scale, the lowest note being the note of the first string of the Ch'ìn stopped at the tenth point [Tsai Yü]. Lü Lü Chêng I gives what seems to be the source of the modern system:

The first twelve strings and the last twelve are tuned alike—chih, yü, Kuang, shang, chiao, chih, yü, Kuang shang, chiao, chih, yü,—while the middle string is marked Huang Chung. The Shé is peculiar in having no mechanical means for tightening the strings. The four specimens at the Confucian Temple at Hangchow are lacquered black with dull gilt ornament. Each lies on a pair of ornamental trestles. The total length is about 80 inches, the breadth 18¼ inches, the length of the head 8 inches, of the tail 17½ inches; the thickness of the sound box in the middle is not quite 3 inches.

I have been unable to make sure whether the strings are stretched in this way, or whether after traversing the body they are taken down through the second set of holes and carried round the tail in the reverse direction to that described above.
The Shê is now used only at State services, and the art of playing it is in many places practically lost. Confucius is recorded to have played the Shê, singing to its accompaniment. The Chinese prefer it to the Ch'în, and Amiot wrote of it in 1776. "Nous n'avons en Europe aucun instrument de Musique qui merite de lui être préféré. Je n'en excepte pas même notre Clavecin, parce que les sons aigres de cordes de métal, et le bruit que font quelquefois les touches fuit auer, affectent désagréablement une oreille un peu délicate."

The Shê is the only survivor of the few instruments which had a compass of two chromatic octaves. The ordinary number of sixteen notes in instruments giving a fixed chromatic scale is due possibly to the requirements of the ancient tunes. In the Sung dynasty it was pointed out that there were only twelve divisions of the octave and that, consequently, chromatic instruments should not have more than twelve notes.

The Shê is said to be a descendent of the ancient K'ung Hou 箓篌, an instrument of twenty-five strings [K'ang Hsi].

The Music Book at Ch'ü Fu in Shantung, called Shêng Men Yo Chih 肁弐樂誌, printed in 1716 and reprinted in 1887, tunes the Shê as follows: the first twelve strings to the notes of the middle octave, D—C sharp, and the upper twelve strings to the notes of the upper octave, while the thirteenth string has the note "the middle string is the highest and is not played."

The Confucian orchestra, as given in the same book, is:—Chu 矢, Yu 玉, Po Chung 箇鑛, Po Ch'îng 箇磬, Hsuan Ku 懸鼓, Pien Chung 篯鑛, Pien Ch'îng 篕磬, Ying Ku 榾鼓 Tsu Ku 足鼓 T'ao Ku 賽鼓, Téng Ko Chung 睽歌鑛, Téng Ko Ch'îng 睽歌磬, Po Fu 撷拊 [in the Hall], T'ien Ku 田鼓 [outside the Hall], Ch'în 琴, Shê 瑟, Shêng 笙 [with 17 reeds], Hsüan 瑚 [five holes],
Ch'ih 箜, Feng Hsiao 凤萧, Shuang Kuan 雙管 [six holes near the top of each pipe], Tung Hsiao 洞箫 [seven holes], Lung Ti 龍笛. The drawing is apparently inverted.


The Rev. F. W. Galpin has a specimen, purchased perhaps at Hongkong, with fourteen brass wires.² The instrument shops at Hangchow, however, say that it has properly fifteen silk strings. At Peking a pair of Chêng has been seen, each 5 or 6 feet long and with fourteen silk strings.

The Chêng seems to differ from the Shé chiefly in the depth of the body, which is 4 or 5 inches for an instrument about 4 feet long. Van Aalst says: "It is used in preference to the sé at imperial receptions and on joyful occasions." The Shuo Wên describes it as a stringed instrument with a bamboo body. A note in the music section of the Shih Chi also mentions bamboo, but with reference probably to quite a different Chêng. Another old book says: 'A sort of Shé, originally with twelve strings, but now with thirteen'.—K'ang Hsi. [see Plates X. and XI.]

A rather different instrument, called Fu Ch'ên 抨琴, with allusion to the story of Chu Ko Liang, is made at

¹ This must not be confused with Cheng, the French spelling of Shêng, [III. B. b. 2.]. Chêng often appears as Tseng in European books.
² Compare also Brussels Catalogue, 150. The instrument there described and figured has fourteen brass strings; and also a vibrating wire inside it. The small size of this specimen, less than 39 inches long, and the shape, which is more like the Ch'in than the Shé, suggest that the wire-strung Chêng is a southern instrument distinct from that found at Hangchow or Peking. A similar instrument in the same collection [No. 761] is from Tonkin; and five of such instruments [played by women] appear in a photograph of an Annamese band. T'ai Yü evidently intended to indicate the northern silk-strung instrument by the name Chêng.
Hsü chou in Kiangsu. It differs from the ordinary Chêng in having the tail reduced to about 1 inch in length, and in having tuning pegs. These last stand upright in three rows of five across the head of the instrument. The strings pass down through holes in the head, as in the Shê and Chêng, and are fastened to the lower ends of the tuning pegs. The specimen examined was about 4 feet long; the bridges were elaborately carved, and the whole instrument covered with designs in various colours.

§§.—With a neck.

1. YÜEH CH'IN (IUE K'IN) 月琴. The body is circular, made of two discs of wu t'ung wood, between which is fitted a ring of boxwood. The diameter is 14 inches, the height about 1\(\frac{3}{4}\) inch. The neck is of redwood and 10 inches long; from the body to the nearest tuning peg is 4\(\frac{3}{4}\) inches. The scroll is bent sharply back, curving up again at the end. There are four silk strings, which are tuned, according to Van Aalst, in pairs at the interval of a fifth. Van Aalst's description and picture do not quite agree with the instruments seen at Shanghai, showing among other things openings in the sound board which are not found in any of the instruments of this kind either at Shanghai or, according to a Cantonese gentleman, in the South. The strings of all these instruments except the Hsien tzü are attached to a piece of wood [Fu hsien 纰絃] fixed to the sound board as in the European guitar. A better made specimen, only 1\(\frac{1}{2}\) inch high, had the top and bottom boards fitted into the circumference, which was made of redwood. It had also three frets on the neck and seven on the sound-board, while the commoner instruments have two on the neck and eight on the sound-board. The Pekingese Yüeh Ch'in have the latter arrangement.

1 The instruments described under articles 2. and 3. should be classified thus:—

2. (1) SHÊ; 2. (2) CHÊNG, with silk strings;

3. FU CH'IN (FOU K'IN); 4. CHÊNG, with wire strings.
but each of the eight frets on the sound-board is divided, the further half being placed to give a slightly sharper note than the nearer half. The instruments at Peking and Hangchow have not the sharp bend in the neck. There is a variety with the body octagonal, and another with a segment cut out of each side of the circular body. [see Plate X, fig. 3.]

2. SHUANG CH‘IN [CHOUANG K‘IN] 雙琴.
As made at Shanghai this consists of an octagonal body with curved sides, of which the greater diameter is 9.5 inches, the lesser 8.5 inches, and the height 1.375 inch. The sides are of redwood 0.5 inch thick, the top and bottom are wù t‘ung boards. The redwood neck is 31 inches long, 1.25 inch wide, and has thirteen ivory frets. There are four strings tuned like those of the Yüeh Ch‘in. The frets give the following notes [Brussels Catalogue, 779]:—

An inferior variety has a rather larger body with straight sides. The Shuang Ch‘in is the least common of the guitars—specially in the North—but it is sometimes used in large processions [see II. A. 2. (2)]

3. (1) P‘I P‘A (P‘I P‘A) 瑄琶. Plates X and XI. The name is said to be properly called Pi P‘a, and is sometimes also written P‘i P‘o 琵琶. Other names are Hu Ch‘in 胡琴, and Hun pu ssü 滾不似, which is commonly written 渾撥四 [Shih Lei Fu Sect. 44]. P‘i and P‘a are said to be the technical terms for two different actions in lute playing [K‘ang Hsi s.v. P‘i]. A lute with a pear-shaped body [Fu 腹] of curved section covered with a flat sound-board of wù t‘ung. On the neck [Ching 頸] are four large rounded ridges [Hsiang 相] of ivory, horn, or
wood, which are used as frets on certain occasions, and above and below these on good instruments are small plates of ivory with inscriptions engraved on them. The scroll [ Feng-wei t'ou 鳳尾頭] is of redwood and bends back from the neck nearly at right angles, but is curved upwards again at the end. The upper angle formed by the bend is called Shan Kou 山口, the angle below is Feng Huang Tai 凤凰台. There are four or six silk strings. The four strings are normally tuned to Ho, Shang, Ch'ê, Liu—say D, G, A, D. When there are six strings the second and fourth are tuned with the first and third respectively. An old six-stringed instrument at Shanghai had the first and second and the third and fourth strings very close together. The total length of this instrument was nearly 42 inches, of which 8½ were occupied by the curved scroll. The greatest width was 12½ inches, and the greatest thickness 2 inches. There were twelve frets [P'in 弹] on the neck and soundboard. A commoner number of frets is ten. Of the four Hsiang the first raises the note one tone, the other three one semitone each. The P'in give the following intervals:

\[
\begin{array}{c}
\text{ten frets} \\
\text{twelve frets}
\end{array}
\]

\[\text{At Brussels there is a specimen with eleven frets, of which the second is used only for the second string, and the tenth is divided, the part under the first string being arranged to lower the note of that string by a semitone. The same instrument has a vibrating wire inside it. [Brussels. Cat. 158].}\]
The Shuo Wén says that the Pi P'a was played on horse-back; and the Feng Su T'ung, of the second century, says that it was 15 inches long and had four strings, referring to the ancient instrument; the T'ang History says that the origin of the then modern instrument was unknown; the Ku Ch'in Yo Lu conjectures that it was invented at the end of the reign of Ch'în Shih Huang after the suppression of the ancient music in the third century B.C. [K'ang Hsi s.v.]. The Japanese Biwa seems in most respects identical with the Pi P'a, but it has only the four divisions of the neck and no frets [P'in] on the sound-board [Brussels Cat. 783]. This may show that the P'in are a comparatively modern addition to the Chinese instrument. The Biwa has also the sound holes which are now rare in the Pi P'a [Engel, p. 195].

The Pi P'a is not very commonly seen in any religious service, but it is said to be used by Taoist and by certain Buddhist priests, and may be seen in religious processions. On the stage it is said to be used at Soochow for the music called T'an Huang 端簧, when the leader plays the Hsien tzŭ; and at Ningpo for Wén Shu plays. Van Aalst says that in the North it is played chiefly by men, and in the South by women. It appears to be properly a solo instrument, used for playing descriptive music such as may be found for example in the Pi P'a P'u, a book in three small volumes published in 1818. This book gives the names of the parts of the instrument1, directions for playing, the special notation used [constructed in the same general manner as that for the Ch'în], diagrams showing the notes of

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1 In addition to the parts named above, the book gives Feng Mei 鳳眉, a mark [?] joint on the underside of the instrument, Feng Yen 鳳眼, two crescent shaped holes in the sound-board, and Chên 慶, tuning pegs.
the open strings and of the various frets in the different methods of tuning, and finally large numbers of pieces from the collections of Wang Chün-Hsi of Chihli and Ch'ên Mu-Fu of Chekiang. The music is written in the Kung Ch'ê notation, with the special symbols written against certain notes which require special fingering—as when two strings are to be played in unison. Where no special direction is given, either of the actions called t'an and t'iao may be used. The strings are stopped with the first, second, or third finger of the left hand, the change of position from the Hsiang to the P'in being clearly marked in the music. The melody is played with the thumb and first finger of the right hand, and the other fingers are only used for the different ornamental devices called lun.

3. (2) CHIN KANG T'UI (KIN KANG T'OU EII) 金剛腿. A small three-stringed variety of P'i P'a, which is also called, at Shanghai, Ssū pu Hsiang 四不相. The length is 26 inches, the width 7½ inches. The neck is made in one piece and is only slightly curved. There are ten frets.

The four Kings of Heaven in Buddhist Temples are said to represent the four brothers Chin Kang of ancient Chinese history, and are at least sometimes called by that name, so that the name “thigh of Chin Kang” has perhaps some connexion with the fact that one of the four Kings holds a P'i P'a in his hands.

4. HSIEN TZÜ (HIEN TZEU) 三絃. The Strings; also called San Hsien 三絃 or Three Strings. The body is a heavy oval frame of redwood measuring 6½ inches by 6 inches, and 2½ inches thick, covered on both sides with snakeskin, which is sometimes fixed with a little rim of brass. The neck is made of redwood 30½ inches long and 1½ inch wide at the base, tapering slightly, and curved back at the end. There are no frets. The three strings are
tuned to Ho, Shang, Liu, or more frequently to Ho, Tsū, Kung, and are generally played with a plectrum\(^1\) [Van Aalst]. The plectrum is a small oblong piece of jade. The neck passes right through the body, and the strings are attached to the projecting end which is covered with a cap [sometimes of ivory] like that of the Hu Ch‘in. In a Cantonese specimen the strings were tied to a piece of wire. This was bent in five places making three angles for the three strings in one direction and two in the other for the string by which it was tied to the ling [\(\text{\textbf{M}}\)]. After crossing a broad and low bridge on the sound-board the strings pass through and under a small slab of ivory, which is tied flat to the neck and can be moved up and down. The Hsien tzū is played often at Shanghai by blind men, and is also used in processions and by strolling bands and in the theatre.

A larger variety is made at Shanghai, of which the body measures about 8 inches by 7\(\frac{1}{2}\) by 3\(\frac{1}{2}\). A specimen of this size—said to be Cantonese, but possibly a Siamese from Japan—had the body oblong with slightly convex sides, the neck not quite 30 inches long and 1 inch wide, and the scroll made separate and moveable. An undoubted Cantonese instrument was like the smaller variety given above.

The large Hsien tzū seems to be one of the commonest instruments at Peking: it is generally made there of Ch‘ai wood with a redwood finger-board glued to the neck. [see Plates X and XI.]

5. HU PO (HOU POUO) 胡譲. A four-stringed instrument with small pear-shaped body, covered with snakeskin, and a long neck. The strings are attached to a.

\(^1\) Most, if not all, of the Chinese guitars or lutes are played with a plectrum I am told. Playing without a plectrum was introduced in the seventh century, but perhaps again given up [Weh hsien t‘ung k‘ao §137].
projection at the end of the body. The scroll has a sliding cover, perhaps to protect the strings from dust. The illustration [Plate VI, Fig. 1.] is taken from an old specimen seen at Peking. The neck and body were made of tzü t'an wood, with inlaid bone ornament. The instrument is said to be used in the Palace. The characters given above are the name of an old lute or guitar, and represent very nearly the name of this instrument; the man in whose shop it was found wrote 琥珀, which does not seem to give the sound correctly.

b.—Struck strings.

1. YANG CH'IN (IANG K'IN) 洋琴, 'The Foreign Ch'in?' This is a dulcimer very much like the Persian Santir, a fact which, added to the name, makes it probable that it was introduced from Persia. It seems also to be peculiarly a southern instrument, though not uncommon about Shanghai and in the North. It consists of a shallow trapezium-shaped box with a cover, and is strung with thin brass wire. A Cantonese specimen, which was seen at Shanghai, was made of wu t'ung, the sound-board not coloured and the sides and cover lacquered black. The strings were arranged in fourteen sets of three, those for the two lowest sets made of two wires twisted together, and either end of each wire was fastened to a tall brass tuning peg with a square head. At either end of the sound-board was a fixed ridge of redwood with a brass edge, and nearer the middle were two bridges. Along the top of each bridge square notches about 1 inch wide were cut leaving seven raised pieces to carry half of the string, and the two bridges were so placed that the raised parts of one came opposite to the notches in the other and vice versa, so that seven sets of
strings passed over the right hand bridge and through the notches of the left hand bridge, and the other seven over the left hand and through the notches of the right hand bridge. By this arrangement every string gives two notes, one on either side of the bridge which it passes over, but the notes on the right side of the right hand bridge are not used. The names of the notes were written on red labels under the proper strings, and if they represent the same system of tuning as that transcribed by Van Aalst and Mahillon the notes I and Fan must both be flattened. There were two openings in the sound-board, one in the middle and the other near the left hand end, and each was covered with an elaborately carved and perforated ivory cap. In the middle of the long side was a narrow drawer containing the massive brass tuning key, the top of which was fashioned into a hammer to tighten the pegs with. The instrument is placed with the longer strings near the performer. The strings are struck with two delicate and springy bamboo hammers called Ch'in Chu 琴竹.

No Chinese instrument probably is more varied in form, size, and arrangement than the Yang Ch'in. Those seen about Shanghai are more roughly made than that which has been described, and the strings are generally fastened to plain iron pins looking like those of a piano. The number of sets of strings is said to be commonly fourteen or sixteen, and the number of strings in a set to vary from two to four. No. 792 in the Brussels Catalogue appears to have only one string to each note or pair of notes, while a large instrument made at Shanghai with nineteen sets of strings had two for the longest set and five for each of the remaining eighteen. The Yang Ch'in is played as a solo instrument by amateurs, and Van Aalst says:—“It may sometimes be heard together with the violin and the guitar, accompanying songs and ballads.”
The scale is somewhat as follows:

left of right bridge

right of left bridge

A different scale is given, partly based on and partly in defiance of the Chinese labels placed under the strings, by M. Mahillon [Brussels Catalogue 165].

In playing the Yang Ch'in the performer constantly strikes two sets of strings together or in rapid alternation, often ending a long note or a phrase in a tremolo made by holding the hammers quivering against the strings. [see Plate X.]

c.—Bowed strings.

§.—Without a neck.

1. LA CH'IN (LA K'IN) 拉琴, Plate VI, Fig. 2.
A bowed psaltery. This instrument has a curved sound-board and flat back like the Shé or Chéng, and is played with a bow like that of the Hu Ch'in [see below]. There are ten pairs of strings, each pair passing through two holes at the top of a two-legged bridge 1.875 inch high. The strings pass through holes in the sound-board near the wider end, and are fastened at the other end to iron tuning pegs. They are tuned as D, E, G, A, B, D, E, G, A, B, beginning from the nearer side if the instrument is placed with the wider end to the left. An iron tuning-key and
hammer is used. The length is about 26 inches. The instrument is held with the thumb and finger by the two holes on the underside. The body is sometimes left plain, sometimes coloured red and painted with flowers.

The La Ch'ın is fairly common at Peking, where it is said to be used to accompany songs; but it is not known in the neighbourhood of Shanghai.

§§.—With a neck.

HU CH'IN (HOU K'IN) 胡琴. This is the general name of the principal instruments of this division. The characteristics of the Hu Ch'ın are a small cylindrical or cup-shaped body open below and covered at the top, called T'ung 筒; a more or less long neck, Kan 柱, which passes right through the body; prominent tuning pegs, Chou 軸; and a bow, Kung 弓, strung with horse hair and inseparable from the instrument. The Hu Ch'ın may be broadly divided into two groups, of which the first has the following common features:

a. The body circular or polygonal, with straight or concave sides.

b. The sound-board formed of snakeskin.

c. The tuning pegs parallel to the axis of the body.

d. A moveable nut consisting of a band of string or other device for bending the strings towards the neck.

This group includes:

1. (1) TAN CH'IN (TAN K'IN) 膳琴. The following is an account of a good instrument. The neck, 16 inches long¹ and 11½ inches to the nearer tuning peg, was

¹The lengths of the necks given are in every case exclusive of the part that traverses the body.
of old Lo-han bamboo, with an ivory top. Seven oblique knots very close together at the upper end gave a firm hold for the tuning pegs, which were of some dark coloured wood and fluted. Immediately below the tuning pegs came a smooth space of about 5 inches without a knot. This enables a brass hook, which is tied to the neck and confines the strings—acting as a capotasto, to be easily moved up and down. There was an oblong hole cut right through the part of the neck inside the body, and the end of the bamboo was filled with a wooden plug. A piece of thin iron wire, about 6 inches long, is generally put inside the neck and one end of it is stuck into the wooden plug leaving the upper end free to vibrate against the sides of the neck. This is called Tan and gives its name to the instrument. In this case the wire was missing. The body was of old dry bamboo about \( \frac{3}{8} \) inch thick, 4½ inches high, and 2½ inches in diameter. It was covered with a piece of snake-skin, stretched not too tight to ensure a 'broad' tone, and fixed with a band of blue cloth glued round the top of the body. The skin commonly used is that of the Mang蟒, with handsome markings. On this instrument it was She蛇 skin, which is thought far better. It was plain dull brown with large regular scales. The difference between the two seems to be that the scales of the Mang overlap one another, while those of the She are slightly separated and so expose a certain amount of the very thin skin, which is said to be specially resonant. A very small moveable bridge stood in the middle of the sound-board. There were two silken strings, the thicker called the 'inner string,' and the thinner called the 'outer string.' Each string ended in a loop which was hitched over the projecting lower end of the neck. The strings were tuned to the interval of a fifth. The ordinary key is called Chêng Kung Tiao, the notes of the two strings
being called respectively Ch'ê and Ho. This is transposed to Fan Kung Tiao by calling the notes Liu and Shang, or by sliding the hook on the neck so as to change the pitch while the strings remain Ch'ê and Ho, or sometimes Kung and Ssû. These two keys seem to be the most commonly used [see Additional Notes]. The bow, from Peking, was of cane, long [over 26 inches] and straight, slightly bent over at either end and with a shorter handle-piece than the Shanghai bows have. The hair was white, stretched tight and evenly, and fixed at either end by being put through a hole in the cane. The hair of the bow passes between the two strings. Rosin was smeared over the side of the body near the neck. The performer, a native of Peking, rested the instrument against his left knee with the neck nearly horizontal, moving the bow parallel to the axis of the body and pressing it against the rosin constantly. The neck rested in the palm of his left hand, the thumb holding it just below the hook. The first, second, and third fingers were used to stop the strings, touching them with the middle of the top joint and not with the tip. The neck was said to be the shortest that would be used at Peking.

The above will apply with slight modification to any Tan Ch'ê, and the account of the tuning to the Hu Ch'ên generally. The words in italics mark what were said to be the good points of the instrument.

At Shanghai the Tan Ch'ên is called Ching Hu, and is said to have been unknown there till it was introduced by Pekingese actors twenty or thirty years ago. The measurements are:—body, 4½ by 2½ inches; neck, 14½ inches long.

A cheap variety is sold in the streets. A man from the north of Kiangsu sells these at Shanghai, advertising his wares with this tune incessantly repeated:—
CHINESE MUSICAL INSTRUMENTS.
They vary in size from toys 6 or 7 inches long to full-sized instruments. The measurements of a larger specimen are:—body, 3\(\frac{1}{2}\) by 1\(\frac{1}{2}\) inch; neck, 14\(\frac{3}{4}\) inches long, 3\(\frac{1}{4}\) inch thick; tuning pegs of deal, 5 inches long; the bridge made of a small section of bamboo 4\(\frac{1}{4}\) inch long and 1\(\frac{1}{2}\) inch thick. The strings are confined by a string loop instead of the brass hook. The bow is 24\(\frac{1}{2}\) inches long.

The Tan Ch'ien is the instrument commonly used in the theatre to accompany the singing. The sound is sometimes increased by the performer laying a cymbal on his knee for the instrument to rest upon. [see Plate XI, fig. 4].

1. (2) HUI HU (HOUETI HOU) 徽胡. A variety common at Hangchow, and said to be used in the theatre to accompany the Hui Tiao, both music and instrument having been introduced by actors from Anhui Province. It is distinguished from the Ching Hu only by the small diameter of the body—about 1 inch—and neck. The neck is as long as that of the Ching Hu, but is only 1\(\frac{1}{2}\) inch thick.

The bodies of these two Hu Ch'ien are made of bamboo cut thin, and not coloured or dressed in any way. The necks are usually of bamboo, though at Shanghai redwood is sometimes used, the wooden necks being rather longer than the bamboo. The fixing of the skin with a band of cloth seems to be peculiar to these two instruments.

1. (3) ERH HU (EUL HOU) 二胡. This differs from the Ss\(\tilde{u}\) Hu [see below] only in having one pair of strings instead of two. The neck is about 23 inches long, —16 inches to the nearer tuning peg. At Peking, where it is not common, it is called Erh Ku tz\(\tilde{u}\) 二鼓子, or Liang k\(\tilde{u}\)n hsien erh 鬆絃兒, —Two strings. [see Plate XI.]

1. (4) PAN HU (PAN HOU) 板胡. A variety said to be preferred by Ningpo men, and common also at Hangchow where it is made with a very thick body. It is like
the Erh Hu in all respects except that the sound-board is made of wu t'ung wood instead of snakeskin. In Shantung it is sometimes called Chi Chiin. At Peking, where it seems to be rare, it is said to be used with the Pang tze.

Here may be mentioned two fiddles from Hainan; one with a mahogany body 3 ¼ inches deep and 3½ inches in diameter, and a round neck of the same wood 16½ inches long and tapering towards the body; the other more roughly made, the neck thicker and one inch longer, and the body formed of a cocoanut shell about 5½ inches in diameter. The sound-board in each case is made of deal, less than ½ inch thick. The tuning pegs are parallel to the axis of the body. The bows are bamboo, unusually long and with less hair than the northern bows, but more tightly and evenly strung. Both instruments are locally called Ti Chiin. They are apparently rough examples of the ordinary Cantonese shapes. Three instruments from Canton were marked generally by their fine workmanship, the great thickness of the strings used, the shape of the tuning pegs—ending in a pearshaped knob instead of being conical, and by having the strings tied down near to the neck by a simple loop of string. In other respects, one was almost identical with the Erh Hu; the second was like the Ching Hu, but with a redwood neck and with the top edges of the body rounded off so as to give it a dome-like

1 The strings used for musical instruments are generally made of silk. Those for the Chiin and She are supposed to be of special make: and for other instruments, at least in the eastern part of Mid- and North-China, five kinds or sizes are distinguished, namely Chi'an 繚, Lao 老, Erh 二 or Chung 中, Tzu 子, and Pi 毫. Of these the first is said to be twisted and also wound round with silk, the next three are only twisted, and the fifth is a simple untwisted strand of silk. The Lao and Erh are said to be used for the Hu Chiin. The Pi Pa has the first four, but the Tzu string is said to be sometimes changed for the Pi. The Yang Chiin appears to be the only instrument that regularly has wire strings.
appearance; and the third had a barrel-shaped bamboo body with a very thin sound-board of *wu t'ung* wood, and a redwood neck. The bow of the first was a thin and much curved reed; the other two were bamboo, long and thick. [see Plate X, Figs. 8, 9, 10.]

It will be noticed that the *Pan Hu* and the southern *Hu Ch'in* with wooden sound-boards, do not come strictly within the two groups into which the more northern instruments seem to be divided. The general look of the *Pan Hu* would put it in the first group, while the other is more like the *Hu Hu*, but both have wooden sound-boards, while the tuning pegs are parallel to the axis of the body.

1. (5) **SSÚ HU (SEU HOU) 四胡.** This is called *Ssü kên Hsien érh* or *Four Strings* at Peking. The body is of redwood, hexagonal, 4½ inches high, tapering slightly towards the bottom, and with slightly concave sides. The greatest diameter is 4½ inches. The bottom is formed of fret-work in boxwood. The neck is of redwood, of square section, with the lower angles rounded off, ⅛ inch wide and 25 inches long,—to the nearest tuning peg, 14½ inches. The upper end of the neck is curved back and finished with a cap of boxwood; the lower end passes through the body and projects slightly on the other side. This projection is covered with a carved cap of boxwood called *ling* 頭, measuring 1½ inch by ⅛ inch. There are two double strings. Each double string is put from above through a hole bored through the *ling* and the end of the neck inside it, and the loop of the string is brought up and passed over the *ling* and pulled tight. The two parts of the thicker string are placed respectively first and third and tuned in unison, and the thinner strings are placed second and fourth, and are tuned a fifth above the others. The strings are separated from each other by spaces of not quite ⅛ inch as they pass over the
bamboo bridge or horse \([Ma 马]\), which is \(\frac{3}{8}\) inch high and \(\frac{3}{8}\) inch wide; and instead of being confined by a brass hook like those of the Tan Ch'in, they are put through four holes in a small semicircle of tortoise-shell which is tied to the neck. The tuning pegs are of boxwood, fluted, 5\(\frac{1}{2}\) inches long. The bow is of reed with the upper end curved back, and is double strung—one set of hair passing between each pair of strings. The length is 27\(\frac{1}{2}\) inches, and 4 inches from the upper end is a bamboo peg over which the hair is hitched. At Peking the neck of this fiddle is commonly 30 inches or more in length.

A cheaper kind of Ssū Hu has a bamboo body, cylindrical, with concave sides, 4 inches high and 3 inches in diameter. The neck is of redwood, 26\(\frac{3}{8}\) inches long,—16 inches to the nearest tuning peg.

Bamboo, often stained red, is generally used for the body of the Ssū Hu and Ėrh Hu whether round or polygonal. Redwood is used for more expensive instruments. At Peking the body is sometimes made of brass, cylindrical, about 3 inches in diameter and 7 inches high; but it is generally of hardwood and octagonal. The neck seems generally to be of redwood, but in the North other hard wood is used, and in Shantung the Ssū Hu may be seen with a long bamboo neck. The name Ėrh Hsien, which is given to the Ėrh Hu in many European works, seems to be quite unfamiliar at Shanghai and at Peking.

The second group has the following common features:—

\(\text{a. The body circular; barrel-shaped or hemispherical.}\)
\(\text{b. The sound-board made of wood.}\)
\(\text{c. The tuning pegs at right angles to the axis of the body.}\)
\(\text{d. A ‘nut’ on the neck.}\)
e. The neck made of wood.

f. A 'scroll' like that of the European violin in arrangement.

2. (1) HU HU (HOU HOU) 呼 呼 [pronounced 虎 胡 at Hangchow]: also called Pang tzu Hu Ch'in because it is played with the Pang tzu, and Wan Hu or Wan Ch'in Cup fiddle, from the shape of the body. It is described as a barbarous instrument from Shansi and Shensi, and is used both in theatres and in private houses to accompany the Pang tzu Tiao, a tune said to come from Shensi. The body, of cocoanut shell with five holes below, is 4½ inches in diameter and 3 inches deep. The sound-board is fixed on top of the edge of the body. The shop in Shanghai, where the specimen described was made, seems to be rather peculiar in using cocoanut shell, although it is used in the North; and other shops in Shanghai, while using bamboo, make the body barrel-shaped and stain it dark brown. The redwood neck is 33½ inches long and is round below the scroll, which occupies nearly 8 inches. There is a nut of boxwood, wedge-shaped and cut out below to fit the round neck, to which it is tied about 4 inches below the tuning pegs. The two strings are fixed to a boxwood cap [ling] like that of the Ssū Hu. The Hu Hu and T'i Ch'in both have the small bridge [ma] on the sound-board. [see Plate X and XI.]

2. (2) T'I CH'IN (T'I K'IN) 山 琴. The body is a cocoanut shell 5 inches in diameter and 3½ inches deep, with a hole below about 2½ inches in diameter. The sound-board is fitted into the top of the body. The neck of redwood, flat above and rounded beneath up to the scroll, is 28 inches long. A nut of boxwood, called Shan K'ou 山口, is glued to the neck where it begins to grow wider—20½ inches from the body. This nut is straight on the side towards the body, curved on the other side, and is ½ inch high. The tail
[wei pa 尾巴], corresponding to the ling of the Hu Hu etc., is made of box tipped with redwood, 4 inches long and tapering toward the lower end. Other makers taper it towards the body, or not at all. The length too varies considerably. The two strings are treated as described above, but the key cannot be altered in the same way since the 'nut' on the neck is fixed.

The Ti Ch'in is common at Shanghai, but seems to be little known in the North. It is rather like the Persian Kemangeh. The latter has the globular body—sometimes a cocoanut shell—and the same bow, and arrangement of the neck and tuning pegs. But the body of the Kemangeh is covered with snakeskin, and there are three strings [Engel p. 158].

All the above instruments—or at least those at the first group—are commonly called Hu Ch'in. The Erh Hu and Ching Hu especially are very popular, being perhaps the most commonly used of all instruments except the Ti tzü. But they are not often seen in any religious ceremony [II. A. 2. (2)]. It should be noticed that the size and proportions of the Hu Ch'in vary considerably even in different shops in the same town. The specimens described were all made in Shanghai, except where the contrary is stated.

Of the history and origin of the Hu Ch'in little seems to be known beyond what is contained in the name. Hu seems to have been one of the semi-barbarous regions of ancient China, and is described as bordering on Ch'ü—K'ang Hsi s.v.  Hog. But in the present connexion the word means perhaps little more than foreign. The use of cocoanut shells may suggest a

1 M. Mahillon says that the Erh Hu is derived, according to Fétis, from the ravanastron, a violin named after Ravan, King of Ceylon. The Rorana is almost identical with the Pan Hu [Brussels Catalogue 145, 144].

In Watters' Essays on the Chinese Language, p. 384, we read "this term [越] had a vague and wide application among Chinese writers up to the period of the T'ang dynasty. It then became restricted properly to tribes
At Peking the makers of stringed instruments sell practically nothing else. Gongs, bells, etc. and all wind instruments are sold at a brazier’s shop outside the great south gate of the Tartar city; certain drums and other pedlar’s instruments are sold in lanes in the same neighbourhood; and pigeon whistles and other musical toys are found at the almost daily Temple Fairs. In large cities like Hangchow, Soochow, and Shanghai almost all instruments can be had of one dealer, though at Soochow there are shops devoted to the sale of brass instruments. In smaller towns musical instruments are kept at the miscellaneous goods shops; and gongs and horns may also be bought at the brazier’s.

No account of the instruments or music used at Imperial ceremonies has been attempted in the present list.

CHINESE MUSICAL INSTRUMENTS.

2. (3) TA HU CH‘IN (TA HOU K‘IN) 大胡琴. Of this and the following instrument only unfinished specimens have been seen in the workshop of a well-known maker of stringed instruments¹ in the Liu li Ch‘ang at Peking. Very little information as to their use or origin was obtained beyond the statement that they were used in the Palace². The Ta Hu Ch‘in is made of ch‘ai wood with a sound-board of t‘ung wood. The body is oval with a curved back; 14 inches long, 9 inches wide, and 3 inches thick. It has a thick wooden neck, probably without frets, and a scroll carved into a dragon’s head, 5½ inches long. The total length is about 36 inches. There are two strings, fixed to the tuning pegs in a cavity in the scroll. The bow is like that of the Hu Ch‘in. [see Plate VI, Fig. 3.]

2. (4) ÉRH HSIEN (EUL HIEN) 二絃. See under Ta Hu Ch‘in above and Plate VI, Fig. 4. The sound-board and back are of t‘ung wood, the rest of ch‘ai wood.

¹ At Peking the makers of stringed instruments sell practically nothing else. Gongs, bells, etc. and all wind instruments are sold at a brazier’s shop outside the great south gate of the Tartar city; certain drums and other pedlar’s instruments are sold in lanes in the same neighbourhood; and pigeon whistles and other musical toys are found at the almost daily Temple Fairs. In large cities like Hangchow, Soochow, and Shanghai almost all instruments can be had of one dealer, though at Soochow there are shops devoted to the sale of brass instruments. In smaller towns musical instruments are kept at the miscellaneous goods shops; and gongs and horns may also be bought at the brazier’s.

² No account of the instruments or music used at Imperial ceremonies has been attempted in the present list.
The bow is like that of the Hu Ch'in. The Œrh Hsien must be carefully distinguished from the Œrh Hu [IV. B. c. §§ 1. (3)].

These two instruments, 2. (3) and (4), are not included in the two groups into which the Hu Ch'in proper are divided. The numbers attached to the various Hu Ch'in indicate their places in the general classification and have no reference to the said two groups.
ADDITIONAL NOTES

A

A TABLE showing the approximate relation of the Chinese Scales
to each other, and to the European Scale.

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<td>I Ts'ai</td>
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<td></td>
</tr>
<tr>
<td>夷則</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lin Chung</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>林錦</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Jui Pin</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>挈賓</td>
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<td></td>
<td></td>
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<tr>
<td>Chung Lü</td>
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<td></td>
<td></td>
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<tr>
<td>仲呂</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Ku Hsi</td>
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<td></td>
<td></td>
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<tr>
<td>姑洗</td>
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<td></td>
<td></td>
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<tr>
<td>Chia Chung</td>
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<tr>
<td>夾鐘</td>
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<td></td>
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<tr>
<td>Tai Ts'u</td>
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<tr>
<td>太簇</td>
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<tr>
<td>Ta Lü</td>
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<tr>
<td>大呂</td>
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<td></td>
<td></td>
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<tr>
<td>HUANG CHUNG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KUNG</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above Table gives:

1.—The names of the twelve degrees into which the octave was anciently divided. These are notes of fixed pitch determined by the exact measurements of the pipes which produce them. The notes of the upper octave may also be called Pan Huang Chung, etc., and the notes of the octave below that given are called Pei. Both these names['half' and 'double'] have reference to the length of the pipes required.

2.—The Five Sounds or degrees of the scale—increased to seven by the addition [traditionally in the twelfth century B.C.] of Pien Chih and Pien Kung. These, like our Tonic, Super-tonic, etc., are of moveable pitch, and are placed in the Table to show their relative positions only.
3.—The *Kung Ch'ê Notes*, said to have been introduced by the Mongols about the twelfth century of the Christian era. In popular music these are now moveable degrees of a scale [nearly the same as the western scale], and the addition of the note *Kou* to correspond with the ancient *Pien Chih* suggests that this was the case originally. In modern ritual music however and throughout *Lu Lu Ching I* and *Wên Miao Yo Shu* of the Ming dynasty, they seem to be treated as fixed equivalents for the *Lu Lu* as shown in the Table. In the latter book the music is written with *Chung Lu* or *Shang* for the Tonic, and in this way the *Kung Ch'ê* and *Wu Yin* intervals correspond without the use of *Kou* which never seems to have been popular and is now quite forgotten. The older book occasionally uses *Kou* for *Pien Chih*.

4.—The approximate European equivalents for the *Lu Lu*.

The meaning of the names of the notes seems very uncertain. The *Kung Ch'ê* names appear to be mere transliterations of foreign words; and with the two native scales, whose origin is lost in antiquity, it is at least conceivable that when the notes were first written down the meanings of their names were already forgotten, and the characters used may have been chosen simply to represent the traditional sounds.

Tables like the above may be found in most of the foreign works on Chinese music, and this is only printed for convenience of reference. D is given, on the authority of M. Mahillon [Brussels Cat. Tome II. p. 107], as the actual note of *Huang Chung* as defined by Tsai Yü. The European equivalents of the other notes are only approximate. The more exact relation of the Chinese and European notes is given in Van Aalst's *Chinese Music*, where, however, there
seems to be no sign of a scientific definition of the Kung Ch'ê notes independently of the Lü Lü. The names of the Kung Ch'ê notes in the Table are taken from Wên Miào Yo Shu. The division of the octave at Shang, instead of at Ho, is marked by the use of Chêng [normal octave] with the diatonic notes below Shang, and of Ch'ing [upper octave] with those above Shang. Shang is apparently still used as the Tonic sometimes, but Fan is then flattened so that the scale still corresponds with the European scale.

B

The Ancient Scale in Modern Books.

The relation between the modern scale and the ancient is now very little understood, and the Wu Yin or Lü Lü notations are rarely if ever used except in the manuals for the State ritual. The confusion which prevails in some of these manuals seems traceable to the Lü Lü Chêng I [see p. 5], which gives this comparative table of the scales on f. 28 of the second volume:—

<table>
<thead>
<tr>
<th>WU YIN.</th>
<th>CHU TIAO (Wu-Pia).</th>
<th>LÜ LÜ.</th>
<th>Note on the Lü Lü (Kung Chê).</th>
<th>Note on the Ti (Kung Chê).</th>
<th>English Note.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kung</td>
<td>Kung</td>
<td>Huang</td>
<td>Kung</td>
<td>Sui</td>
<td>E</td>
</tr>
<tr>
<td>Ch'ing Kung</td>
<td>Ta Lü</td>
<td>Chia</td>
<td>Kung</td>
<td>Sui</td>
<td>F</td>
</tr>
<tr>
<td>Shang</td>
<td>Shang</td>
<td>Chia Ch'ing</td>
<td>T'ai Ts'ai</td>
<td>Fan</td>
<td>G</td>
</tr>
<tr>
<td>Chiao</td>
<td>Chiao</td>
<td>Ch'a Ch'ing</td>
<td>K'i Ts'ing</td>
<td>Fan Lü</td>
<td>F sharp</td>
</tr>
<tr>
<td>Pien Chih</td>
<td>Pien Chih</td>
<td>Liang</td>
<td>Chiao</td>
<td>Kung Lü</td>
<td>A</td>
</tr>
<tr>
<td>Chih</td>
<td>Chih</td>
<td>Liang</td>
<td>Ch'ing Pien Chih</td>
<td>Liang Lü</td>
<td>A sharp</td>
</tr>
<tr>
<td>Yu</td>
<td>Yu</td>
<td>Liang</td>
<td>Ch'ing Chih</td>
<td>Nan Lü</td>
<td>B</td>
</tr>
<tr>
<td>Ch'ing Yu</td>
<td>Ying Ching</td>
<td>Liang</td>
<td>Ch'ing Chih</td>
<td>Wu</td>
<td>C</td>
</tr>
<tr>
<td>Piên Kung</td>
<td>Piên Kung</td>
<td>Liang</td>
<td>Ch'ing Pien Kung</td>
<td>Fan Huang Chung</td>
<td>D</td>
</tr>
</tbody>
</table>

- **English Note.**
  - E: Flat
  - F: Sharp
  - A: Sharp
  - B: Natural
  - C: Natural
  - D: Sharp
The approximate English equivalents for the Lu Li notes have been added. In the original the notes are printed in five concentric circles, of which the outermost [our left hand column] is fixed, and the rest are on a revolving piece of paper — so as to illustrate the transposition of the Wu Yin. In transposing, the following curious rule is observed, as an attempt perhaps to overcome the difficulty of making a scale of fourteen notes [or seven tones] correspond with one of twelve: — To find the true Lu Li equivalent of the Wu Yin note that stands opposite the upper Huang Chung or Ta Li, go down one octave and two notes. Thus when the scale in the above table is printed on another page, Pien Kung [opposite Pan Huang Chung in our table] becomes Wu I — two notes below the lower Huang Chung; or if Kung were Nan Li, Chiao, opposite Pan Ta Li, would become Ying Chung, two notes below the lower Ta Li. And the identification of the notes for the flutes Hsiao and Ti, with the Wu Yin is scarcely more successful, although, by good fortune, the two scales concerned have the same number of notes and so get round the circle more comfortably together. It is hard to be sure whether the notes such as Ch'ing Kung, Wu, Fan Syo, are the octaves or the sharps of Kung, Sei, Fan; but they are printed in the way usually taken to indicate octaves.

The note of the first hole of both Hsiao and Ti is [or was] called Kung ¹, but the pitch of the Hsiao is a fifth below that of the Ti, so that when the music for the Ti in the Confucian music books is written a fourth above that for the Hsiao, the two instruments sound in octaves or unison. The scales of the modern ritual Hsiao and Ti, as ascertained by the Rev. F. W. Galpin, begin [with all holes closed] on D and A respectively,¹ so making Huang Chung in the above table

¹ Van Aalst gives the same notes for the popular Hsiao and Ti.
equivalent to E. In *Wén Miao Yo Shu* the Hsiao and Ti are of one pitch, the first hole being marked *T'AI TS'U* on each, and, on the Ti, *Ssiu* as well. If, as is possible, this book follows Tsai Yü in making *Huang Chung* = D, this shows that the pitch of the Hsiao has not changed since the seventeenth century, and that *Huang Chung* has been raised from D to E in the present dynasty. In considering the names of the notes of the Ti, it should be observed that the *Ssiu* hole gives probably the same note in *Wén Miao Yo Shu* as in *Lù Lù Ch'eng I*, viz. E, though it represents *Ts'ai Ts'U* in the former, and *Huang Chung* in the latter, and is the first hole of the older instrument and the fourth of the later.

When it is remembered that the *Lù Lù Ch'eng I* represents the authorized system of classical music for this dynasty, it is not surprising that the modern Chinese look on the ancient scales as a perplexing subject.

The Seven Tiao or Keys of the Ti.

笛譜七調

The following table is said to be copied from a book for the Ti tzü player in the theatre music called *K'un Ch'iang* 倫腔.

The *K'un Ch'iang* music is said to date from the eighth century of our era, and it will be noticed that the notes I and Fan are marked as not used, and that the Wu Yin scale begins in each key on Shang instead of on Ho. There is nothing in the original table to indicate the use of sharps or flats, but it is probable that each scale is intended to have the ordinary intervals of the Wu Yin, and this is confirmed by the scales for the P'î P'a and for the Ch'în. The keys given in the Chinese
This table I owe to the kindness of Mr. Ching of Nanking.
diagram above are: 1. Chêng kung; commonly called Chêng. Kung ought perhaps to be written 宓. Chê is the note got with all the holes closed. 2. I tsü; chê is got by opening the first hole. 3. Shang tsü. 4. Chê tsü. 5. Hsiao kung; very commonly called fan 反 kung or simply fan 反. Fan or hsiao are probably added to distinguish this key from Chêng kung. Fan kung and chêng kung seem to be the commonest keys in ordinary use. 6. Fan tsü. 7. Liu tsü; chê is got by opening all six holes.

I and Liu, the second and seventh names above, seem not to be notes, but numerals—one, and six—describing the number of holes to be opened to produce chê. The names of the four intervening keys seem to be due to the coincidence that there are four numbers between one and six, and four notes between i and liu in the scale.

From a comparison of the above with the P'ê P'a P'êu [a book of music for the P'ê P'a], which however only uses numbers 1, 4, 7, and probably 5, it seems possible that the seven keys correspond to the Western keys beginning on the seven natural notes in the following order G. A. B. C. D. E. F.

In Wen Miao Yo Shu, Ho seems to be a fixed equivalent for Huéng Chung [D], and the Wu Yin scale begins on Shang [G]; [see p. 170 ff.] This is exactly the same as Chêng Tiao where Chê is A, Ho is D, and the actual scale begins on Shang, G. On the Shêng also [III. B. b. 2.] the Western scale begins with the pipe marked Shang. Van Aalst says on p. 16 of his book that the notes I and Fan were omitted in the Ming dynasty. This would produce a scale with the groups of two and of three notes of the Wu Yin scale reversed, or, the Wu Yin scale beginning on Shang, and the omission of I may have given rise to the habit of beginning the scale whether Wu Yin or Western, on Shang. The scales for the Ti tsü seem
intended to be all on the same plan, so that the Western scale would begin in each case on Shang. Another explanation of this arrangement is perhaps to be found in the fact that the notes of the six holes of the Ti tsū have the same names as those of the six holes of the Hsiao, although the pitch of the two instruments differs by a fifth, as is shown on p. 137. Thus the note Shang on the Ti tsū is called Ho or Liu on the Hsiao, and it may be that the scales were first defined with reference to the Hsiao, which was the official flute of the Mongol dynasty, or some similar instrument. The use of the names Ho, Ssū, I, etc. as names of the holes of the Ti irrespective of the actual pitch of the notes, or, in a sense, of their position in the scale, should be noticed.

Ts'ai Yü [Vol. VI. f. 20, sqq.] gives a number of tunes to songs from the Book of Odes. The first twelve of these are in a key called Huang Chung Chih Tiao, and begin and end on Lin Chung [A], while the remainder are written in Huang Chung Chiao Tiao, and begin and end on Ku Hsi [F sharp]. The first set use the notes D, F sharp, G sharp, A, B, C sharp, and the second D, F sharp, G sharp, B, C sharp. This shows two ways of treating the ancient diatonic scale which produce to western ears something of the effect of a major key and its relative minor—though it is true that the minor third is little used in the second set of tunes.

Music in the Theatre.

There seems to be some uncertainty about the original nature of the K'ün-Ch'iâng [Note C. above], as play-acting is supposed to have been introduced by the Mongols in the thirteenth or fourteenth century. But Ming-Huang of the T'ang dynasty, who reigned from 713 to 756, is undoubtedly
looked upon as the patron of actors, who are still called Li-Yuan Hang from the name of the old imperial garden at Ch'ang-An, in which he built a school for training actors. And it was he who, in a dream, saw fairies in the moon with rainbow skirts and feather jackets, acting and singing; and when he awoke he wrote down the music which he had heard, giving it the name of Kun Ch'iang, and taught it to his actors. And though the music is difficult and not very popular, every actor is supposed to learn it to this day.

The music used in the theatres is perhaps the most important branch of Chinese music, and at the same time it is the most difficult to get a clear idea of. A considerable part of the majority of plays is sung, and an experienced native would have no hesitation in naming the tune which was being used on any occasion. For it seems that special music is by no means always composed for a new play, but many plays are sung to the same tune which will be one of the traditional tunes¹ known by the actors. The choice of tune is no doubt limited by the nature of the piece; it is said that Erh Huang Fan Tiao for example, would never be used for a comedy. Of all the tunes, Erh Huang is now perhaps the most popular, at least with Pekingese actors. This tune, as its name, the two Huang, implies, seems to have come from the neighbourhood of two places in Hupeh, whose names include the word Huang. There are now many varieties of Erh Huang distinguished in different ways, such as by their time, or tempo, or key. It is said that these are all derived from the true Erh Huang, but the variations are so great that only an expert can recognize their connexion with the original tune. Further than this it appears that each actor has full

¹ Of tunes accompanied on the Hu Ch'ia, the commonest are Erh Huang 二黄, Hsi Pi 西皮, and Pang Tzu 槎子.
liberty to vary and embellish the particular tune which he is singing provided that he keep within certain limits. What these limits are is not very clear, but it seems that, for one thing, the time of the piece must be strictly adhered to; while the fact that the singing is accompanied by the Hu Ch'ìn or some other instrument makes it likely that there is at least a sort of skeleton tune which runs through the whole performance. This impromptu variation of tunes [comparable perhaps to the variations introduced into recitative by some European singers] is one of the tests of good singing, and the great actor Sun Ch'ou-Hsien is famous for his brilliant and original treatment of familiar themes. What has been said about the variations of Ėrh Huang will apply, as far as it is right, to other tunes as well.

Another point which seems to be more or less clear is that each tune has its proper key and is not as a rule transposed. A Chinese gentleman thoroughly familiar with theatre music seemed to consider the difference of pitch as one of the most important distinctions between one tune and another; and the difference of pitch was ascribed to the difference of key—a fact which may suggest that Chinese tunes are confined within a limited number of notes for each key, as is the case with tunes in the Gregorian modes.

The K'un Ch'iang is said to be published in a book of about forty volumes. The more popular tunes, of which every actor, as has been seen, has his own version, are not written down. The instrumental interludes and the accompaniments are of more fixed form and can be written. A prominent feature of the instrumental parts is the constant repetition of a short phrase easily remembered and often of considerable beauty.
Mr. Wead in a Paper entitled Contributions to the History of Musical Scales, [Washington, 1902] gives the following rule:—“The primary principle in the making of musical instruments that yield a scale is the repetition of elements similar to the eye; the size, number and location of these elements being dependent on the size of the hand and the digital expertness of the performer.” In establishing this rule Mr. Wead discusses stringed instruments with frets; flutes, including reed instruments; and especially resonators; showing that originally scales were derived from instruments, and instruments not designed to give certain known scales:—the positions of frets and finger-holes, and the lengths of strings and pipes being fixed first with a view to their artistic appearance. The following arrangements of the above elements are given:—1. Frets evenly spaced along the finger-board; 2. Frets divided into groups and evenly spaced within the limits of a group; 3. Finger-holes on flutes evenly spaced; 4. Finger-holes divided into two groups, each of three evenly spaced holes; 5. Finger-holes on resonators symmetrically arranged, in squares, triangles, etc.

The Chinese seem to have had a theoretic scale from an early date and to have made their instruments to conform to it. Mr. Wead dismisses this scale with “the Chinese cycle of fifths must be explained and determined on entirely different physical principles.” Nevertheless it may not be uninteresting to examine Chinese instruments in the light of Mr. Wead’s remarks. First one may notice that ornament is now rarely applied to any extent to instruments in China. The lacquer and gilt of the ritual instruments is applied to them in common with the stands, tables, etc., which are used in the State services and is not an original or essential feature. Of
the five arrangements of frets and holes given above, 2. is found on the Pi P'a, 3. on the Ti tzū, etc., 4. perhaps on the ancient Ch'i'h, and 5. on the Hsūan before the seventeenth century. Symmetrical arrangement of parts may be seen in the pipes of the P'ai Hsiao and Shéng, the strings of the Yang Ch'ín, and the 'frets' of the Ch'ín. These last, as M. Mahillon shows, do not give the theoretic Chinese scale and their arrangement is curious. The middle point bisects the strings, and the other twelve points are arranged symmetrically with a group of two and a group of four points on either side of the middle. There is no even spacing either in the whole series or in the groups. Amiot says the groups are designed to give the series 1, 2, 4. The middle point and the third and sixth from it in either direction may be got by bisection. See Plate V.

The modern Ch'i'h [Plate III, Fig. 5], is remarkable for the spacing of the finger-holes roughly conforming to the principle that the holes for the lower notes should be further apart than those for the higher notes. As made from the Sung dynasty till the seventeenth century it had the further peculiarity of having one finger-hole smaller than the others. In flutes like the Ti tzū the enlargement of the intervals as the scale rises, which would seem to be the natural result of the evenly spaced holes, is probably corrected by the proportionately increased length of pipe below the successive holes.

On the List of Instruments contained in the Wei Hsien T'ung K'ao 文獻通考, an Encyclopædia compiled by Ma Tuan lin 馬端臨 c. A.D. MCCC.

This list of ancient and mediæval instruments contains more than four hundred names, but of this number a few are
names of frames or stands or of methods of playing, while many more are names of famous individual specimens known in legend or history, so that the number of different kinds of instrument described is not so great as at first appears. The instruments are classified under the Eight Sounds, with an extra Miscellaneous class, and each Sound is divided into Classical [Ya 雅], Foreign [Hu 胡], and Popular [Su 俗]. The defects of the list are the absence of pictures, the vagueness of the descriptions—very often no description is given at all—and the difficulty in finding out if an instrument was still in use when the book was written. The list is nevertheless of considerable interest and the following extracts from notes made in looking rapidly through it may help to illustrate some points connected with instruments of the present day, and also to give some idea of the state of Chinese music in the fourteenth century. I have used 'modern' below always with reference to the fourteenth century, not to the twentieth.

METAL 金

Classical.

Nothing specially noteworthy.

Foreign.

The Fang Hsiang 方響 apparently still existed. It consisted of sixteen pieces of iron hung in a frame. Each piece was '8 inches long by 2 inches wide, round above, square below.' Cymbals [Ch'eng T'ung Po 正銅鑶] are mentioned as from Nan Chi, Hsi Jung and other foreign countries. The brass horn [銅角] of Kao Ch'ang was like a cow's horn; next to it is the dragon's head horn, cp. III. C. 4.
Popular.

Here among many interesting instruments [some of fantastic shape or prodigious size] we may notice Fêng Tô 風鐃. bells hung from the eaves of pagodas; T'ung Po 銅鉦, apparently the Buddhist bowl [I. B. 3. (1)]; two instruments called Chêng 鐲 not described; an iron flute [T'ieh Tî 鐦笛], a common instrument, the date of whose origin was unknown; and an iron reed [T'ieh Huăng 鐦簧], 'a reed of thin iron fixed with wax.'

Bell chimes [Pieh Chung] appear under both Foreign and Popular instruments. It is noticeable that no bell ancient or modern is called Ling 鈴, though one is described as 'like a Ling.'

STONE 石.

Classical: Foreign: Popular.

Here besides stone gongs [Ch'îng I. B. 2.] we find stone drum, Ch'în, flutes, organ, panpipes, and Fang Hsiang.

CLAY 土.

Classical: Foreign: Popular.

Under Seven hole Hsüan [七孔鑾] we read that the ancient Hsüan had six square holes, produced the six lu 律 [diatonic scale] and had a 'middle sound.' 'The old Hsüan

1 A contemporary allusion to this instrument is perhaps to be found in Marco Polo's statement that 'each guard [in Hangchow] is provided with a hollow instrument of wood [see under Yu Pang] and with a metal basin, and with a time-keeper to enable them to know the hour of the day or night. And so when one hour of the night is past the sentry strikes one on the wooden instrument and on the basin, so that the whole quarter of the city is made aware that one hour of the night is gone.'—The book of Ser Marco Polo [1903] vol. II. p. 187. The watchman of the present day has a hollow bamboo instrument and a gong.
now kept by the T'ai Yüeh has seven holes, upper and lower all round. The Hsüan should be lacquered earth colour, i.e. reddish yellow. The Shui Chan 水簋 is described as a modern instrument consisting of nine cups [probably containing different quantities of water], struck with a stick. The Chi Jang 擊壤 was made of wood [1], like an inverted jar, about 1 foot high. It was then a toy, but in the days of Yao and Shun had been a classical instrument.

SKIN 革

Classical: Foreign.

The chief thing to notice is that a few drums are described as tuned to certain notes. Thus the Chieh Ku 羚鼓 ['deer skin drum'] of Kao Ch'ang and India was tuned to t'ai ts'u. The Chang Ku 枭鼓 [called also Wei 魏, Hsiang 相, Hsi Yao 細腰 'thin-waisted,' Chêng 正, or Ho 和] seems to be the Chang Ku [II. B. 1.] of the present day. It is not stated to have been tuned, but the Fang Ku 方鼓 [a popular drum], tuned to huang chung, is described as like the Chang ku. The body of the Chang ku, if large, was made of clay, if small, of wood.

Popular.

The Fang Ku has been already noticed. The Huang Chung Ku 黃鍾鼓 for the winter solstice, may also have been tuned, though the fact is not stated. The T'ang Ku 唐鼓 has the note:—'Originally inside the Hall was the Po Fu [II. A. 6. (3)], but no Ku; in later times this drum has been used inside the Hall.' This may explain the common writing of the name [堂 'Hall drum'] at the present day. At the end of this section comes a horn [角] green, red, or black,
described as a conical tube 5 feet long made of wood, bamboo, or leather, and used in the Emperor's train.

SILK 絃

Classical.

Nothing but varieties of ch'in and shé. The seven stringed ch'in is declared to be the true ancient instrument.

Foreign.

Under Hu Ch'in is the obscure note: 'The ch'in is one, the distinction is that of Chinese and foreign.' No bow is mentioned. Next comes Hsi Ch'in 西琴 with two strings, between which a slip of bamboo is put as a bow. 'It is also used by the [Chinese] people.' This looks like the embryo of the Hu Ch'ia [IV. B. c. §§.] of our own times. The Gourd Ch'ia 吟琴 from Fu Nan and India may be the original of the Hu Hu or T'i Ch'in [IV. B. c. §§. 2.], but again no bow is mentioned. The lutes or guitars are very hard to identify with the instruments we now know. The Tsou P'i P'a 掃琶 was used on horse-back. It had a round body, a straight neck, four strings and twelve frets. Round applied to the body may describe the curved belly of the P'i P'a of the present day, and does not necessarily mean circular. The common Ch'in Han P'i P'a 纘琵琶 had four strings and four frets [kē 隔]; 'the four open notes and twelve [sic] stopped notes make altogether twenty.' Under the same heading we learn that the Hsien T'ao had a round body, a long neck like the P'i P'a but smaller, and twelve frets [柱], but differed in having no 'sound-hole' [eye 目]. There seems to be no reason except the 'long neck' why these two instruments should not be respectively the Japanese Biwa and the P'i P'a [IV. B. a. §§. 3. (1)] as we now know it. The snakeskin

Popular.

The Yüeh Ch' in 月琴 was 'like the P'i P'a,' with round body, long neck, four [or later, five] strings, and thirteen frets. A monochord of the Wei dynasty is mentioned. There is nothing like the Yang Ch' in; but there are two or three instruments played with hammers. The Chi Ch' in 指琴 had five strings stretched on a bamboo pipe and struck with a bamboo hammer. The Chi Chu 指筑 was 'rather like the Chêng' and had a chromatic scale like the Chêng, but that was played with the fingers and this struck with a hammer [箏]. The body was curved and 42 inches long; the neck thin and 4½ inches long; the head 7½ inches long, 6½ inches wide. There were thirteen strings. The left hand managed the frets, the right hand held a bamboo foot-rule [竹尺] to strike the strings with.

GOURD 瓣

Classical.

Modern organs are described as having nineteen pipes. The scale given is hard to understand, but it is elsewhere said to have been chromatic. In the Sung dynasty an ancient
organ [Yù 箫] was found ‘with pipes but without reeds, the series of pipes irregular, and also a curved neck, and all with phoenix ornament.’ Huang 箏 was an instrument originally with bamboo reeds, but now ‘the people use reeds of iron leaf.’

Foreign.

The Liih Yû 笙 was shaped like a small bell and rubbed by the hands. It was ‘like the Huang, but without a mouth-piece.’ Perhaps the Jews harp?

Popular.

The 1 Kuan Shêng 管笙 had two pipes and seventeen reeds. ‘The surviving Sung dynasty Shêng all have seventeen reeds.’ Ch‘iu 戴 was a pipe giving the sound ch‘iu ch‘iu, used by hawkers: ‘the same effect can be produced with the fingers.’ Chi Chu 擊竹 were two slips of bamboo several inches long, clapped together in the hand to beat time. It seems as if this last must be wrongly classified.

BAMBOO 竹

Classical.

Under Ti 遊 we gather that the Kuan and Ti were much alike [see under III. A. b. 2]. The Han dynasty Ya Ti had seven holes so that it gave the full scale. Ts‘ai Yung 素鸛 says that the Ti was 1 foot long, 1 inch round [? diameter], open [as opposed to the Kuan, which is said to have been stopped], and with finger-holes; now the Kuan and Ti have one rule. A Han dynasty Ti 箫 gave the note Shang 商 with the back hole; the same hole of the Chin dynasty instrument gave Chiao. The official Ti of the period was the Tung Hsiao [III. A. a. 2. (3)] of the present time. The method of producing the chromatic scale is given. The ‘leading note’ is got by opening holes 3 and 6, the octave by opening 6. ‘By having a second pipe tuned to Ying Chung the whole scale..."
is got on two pipes, but the modern plan of using half notes [half opened holes] gets it all on one. Under Ch'ih we find that Ch'en Shih calls it a 'stopped Ti.' There was no fixed size. The first hole was at the end, the next four in front, the sixth at the back. 'The blow-hole of the Ch'ih is like a sour jujube.' The scale is: 1st hole open, t'ai ts'ü, half open, ta lü; 2nd open, ku hsi, half open, chia chung; 3rd open, jui pin, half open, chung lü; 4th open, lin chung; 5th open, nan lü, half open, i tsé; all holes open ying chung, half open, wu i. Huang chung, ta lu, t'ai ts'ü, and chia chung will all give their octaves if blown 'whistlingly.'

Foreign.

The Pielh Li [III. B. a. 1. (2)] was evidently common. [At an earlier date it had been freely used in State services.] It gave 'wu, fan, kung, ch'ê, shang, i, ssü, liu, kou, ho, ten notes.' 'All Pan pipes handed down from the T'ang dynasty have eighteen pipes.' Three military horns are named. The Hu Chia is not better described than in other books. The modern Ch'ui Pien 吹簫 was a leaf rolled up, used by cowherds and children. The Ch'iang Ti 羌笛 or Hu Ti 胡笛 had four [or five] holes, and was said in recent books to be the original of the small Ch'ih. The Hêng Ch'ui 橫吹 was like the Ti. The Lung Tou 龍頭 or Lung Ching 龍頸 Ti was a transverse flute with eight holes, used in China; and was possibly the Ti tza [III. A. b. 2. (1)]. The 1 Tsui Ti [see III. A. b. 2. (1)] came from Hsi Liang and was also used in Corea.

Popular.

Pan-pipes with 24, 23, 21, 17, 16, 13, and 12 pipes are mentioned. Of these the Yen Yueh Hsiao 誠樂簫 with 21 pipes was a common modern instrument. Three kinds of Ku Ch'ui Hsiao 鼓吹簫 [i.e. pipes used by the bands hired for funerals, etc.] with 12 or 13 pipes
were used. Under Sung Hsiao 頻簫 it says that an instrument was in use with 16 stopped pipes, of which 4 were not used, 5 or 6 inches long. ‘The seven hole Yo giving the two pien notes is a modern popular instrument’. Under Chi Hsing Kuan 七星管 is the note:—The T'ang dynasty seven stars 1 pipe is the old Ch'ang Ti 長笛.’

The Kung Ch'ên Kuan 拱辰管, a six-hole flute of the Sung dynasty appears to have had finger-holes on either side of the blow-hole like Tsai Yu's ancient Ch'ih [see III. A. b. 1.]. The pipe was 9 inches long, tuned to huang chung, with six holes, four on the left two on the right (其卷有六...四卷左右兩卷左 [v.l. 左] 右. A good scholar confidently read 左 for the first 左右). Under Hsiao Kuan 簫管 we read:—'The rules of the Hsiao Kuan are—six holes, at the side one hole covered with membrane [chu mo 竹膜], the scale begins on huang chung. Also called Ch'ih Pa Kuan 尺八管 or Shu Ti 竖笛 [vertical flute], or Ch'ung Kuan 中管. Ch'ih Pa [*18 inches’] refers to the length. . . .

The fashion of the Shu Ti is like the Ti. What the people now call Hsiao Kuan is not the ancient Hsiao or Kuan [or ‘ancient Hsiao Kuan’].’ This is the only mention of membrane noticed. The instrument in question was not the Feng Huang Hsiao and may have been a whistle. Two or three flutes are described as only 9 or 10 inches long; one at least was as much as 42 inches. The Shuang Feng Kuan 雙鳳管 was a double pipe: ‘At the ends of the pipes are two reeds to form the head.’ Each pipe had four holes, the left pipe giving the notes huang chung to chung lâ, the right pipe giving jui pin to ying chung. Another double pipe seems to have had one pipe tuned a semitone above the other. The Tai Ping Kuan 太平管, unlike the Tai Ping Hsiao of the present day, was a reed instrument. It had nine holes and was like

1 Chi Hsiao—The seven stars: the Great Bear.
the Po Hsi Kuan 蹦滕管 which was like the Ti. These reeds were no doubt double reeds, the single reed being probably, Mr. Galpin informs me, a much later importation.

WOOD 木

**Classical.**

The Ch'ung Tu 春臘 was made of bamboo, 5 or 6 inches in diameter, 7 feet long. The shorter variety was 1 or 2 feet long. It was held in both hands and struck against the ground. The Ying 應 was 65 inches long, like a square barrel with a hammer fixed to the bottom. It was painted black inside and red outside, and was used to 'answer' the Chu [I.A. 1]. The Ya 雅 was 56 inches long, had a large mouth and was bound with thongs of sheepskin with two knots. All three instruments were used to beat time. These instruments were apparently obsolete, but there is no allusion to the clappers now called Ch'ung Tu [I. A. 3 (1)]. A note in the Chou Li under Ch'ung Tu confuses the matter further by speaking of blowing [吹, the word used of wind instruments].

**Popular.**

P'ai Pan [I. A. 5] of nine and of six pieces are mentioned, none of less than six. The wooden hammers for striking bells, etc. are called Chuang Yu 撞木 and should be carved in the shape of a whale.

**MISCELLANEOUS.**

Fun Chü 梵具, the couch, was used by the Nan Man; and for Buddhist [梵] music together with cymbals; and also by soldiers. Ku Kuan 骨管 was a pipe made of a sheep's bone, with no finger-holes, and used for the Wei Hsü ceremony. 'The modern bands have and set out the
instrument, but do not play it, using the Pi eh Li in its place. The Peach-skin 桃 皮 Kuan or Pi eh Li was a peach-skin rolled up and blown. It was anciently called Kuan Mu 管木 and came from Kuo Ch'ang and Nan Man. The sound was like that of the Kuan, Chia, or Heng Ch'ui. 'It survives in the modern bands.' The Hsiao Yeh 嘯葉 was a leaf held in the mouth. Orange or pomelo leaves were used, evidently just as we use lime leaves in England. The leaf of a reed, rolled up like the Chia, was also used.

The list ends with the technical names for the parts of the ornamental frames on which bells, gongs, and other instruments are hung.

To I. B.—1. (5) CHIN KU add:—Gongs bearing a general resemblance to the above are made in the independent Shan states in Yün nan. The rim is turned over at a sharp angle and the knob is very prominent, but the rest of the surface is more flat than in the Chin Ku. The measurements of one of a commonly used size are:—diameter 8.5 inches; diameter of central boss 2.25 inches; depth of boss 1.75 inches; width of rim 1.5 inches. Larger specimens measure 11 inches in diameter. Unlike the Chin Ku these gongs are famous for their far-carrying sound, and are for that reason much used by the Chinese Mohammedan mule drivers in the mountains of Yün nan. A man with a gong goes in front of each string of mules to give warning of their approach where the road bends or is too narrow to allow two mules to pass. Very long strings of mules are followed as well as led by a gong.

To II. A.—3. YÜ KU add:—Yü Ku and Chim Pan are the symbols of one of the Eight Genii [A 神].
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[F refers to Additional Note F.]

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<td>T'ieh P'ai</td>
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**Violin** IV. B. c. §§, [III. B. a. 1. (3)].

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<td>Yün Pan</td>
<td>I. B. 2. (2).</td>
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NOTE ON THE ILLUSTRATIONS.

It has unfortunately been impossible to make the illustrations all of one kind. There has not been time or opportunity to make a complete set of measured drawings, and on the other hand it would have been impossible to get photographs of all the instruments shown in the first six Plates. It is hoped that references in the text and the explanation which accompanies each Plate will, make the illustrations easy to use in spite of some inevitable confusion in their arrangement. Plates VIII [except the Hua mei chiao tzü], IX, X [except 6], and XII are from photographs most kindly taken for the Society by the Rev. F. W. Galpin from specimens in his well-known collection. Plates VII, X 6, and XI are from the work of a native photographer in the Mei Hua Pei at Hangchow. All the illustrations are photographs or carefully measured drawings of actual instruments with the exception of two or three models in Plate XII, and some copies from native books in the first six Plates and Plate XIII.
Explanation of Plate I.

STONE GONGS.

1. T'ê Ch'ing (modern shape.)
1a. Pien Ch'ing (modern shape, see Plate XII.)
2. Pien Ch'ing (ancient shape, tuned to D; after T'ai Yü.)
3. Pien Ch'ing (from Shao Hsing.)
Explanations of Plate II.

Bells without Clappers.

1. Ancient Bell (after Tsai Yü.)
2. Pien Chung (section, modern.)
3, 3. ? Pien Chung (Sung dynasty pattern.)
4. ? Pien Chung (from T'ai Ts'ang.)

*The Scale does not apply to Fig. 1.*
Explanation of Plate III.

1. Yo (vertical flute, after Tsai Yü.)
1a. Yo (not played, Ming dynasty pattern.)
2. Fêng Huang Hsiao (vertical flute with top closed.)
3. Ts'ai Ping Hsiao (whistle.)
4. Ti (ancient whistle, after Tsai Yü.)
5. Ch'i'h (transverse flute, modern.)
6. Ch'i'h (transverse flute, ancient, after Tsai Yü.)
7. Ch'i'h (transverse flute, after a Sung dynasty drawing.)
8. Ti tzü (transverse flute, modern.)
9. P'ung tzü Ti (transverse flute, modern.)
Plate III.
Explanation of Plate IV.

1. 2. Kuan (double reed with cylindrical pipe.)
3. Hu Chia (double reed, after a native drawing.)
4. Hua Chiao (? double reed, after a native drawing.)
5. Chi Na (double reed with conical pipe.)
6. Ch'un Kuan (single reed with cylindrical pipe, toy.)
Plate IV.
Explanation of Plate V.

Ch'in (horizontal psaltery, views of upper and under sides and broad end.)
Explanation of Plate VI.

1. Hu Po (guitar, perhaps Mongolian.)
2. La Ch'in (bowed psaltery, see Plate X.)
3. Ta Hu Ch'in (violin, perhaps Mongolian.)
4. Ūrh Haicn (violin, perhaps Mongolian.)
Ten pairs of strings with bridge for each pair.
Explanation of Plate VII.

1. Mu Yü (wood drum.)
2. Po (cymbals.)
3. Chin Ku (gong.)
4. Lo (gong.)
5. Pao Chü Chih (gong.)
6. Ling (bell with clapper.)
7. Ma Ling (horse bells.)
8. Pang Ku (drum, properly with folding stand; see Plate XII.)
9. Tien Ku (drum.)
10. Pang Ku (drum.)
11. T'ao Ku (rattle drum.)

The above are all from Hangchow.
Explanation of Plate VIII.

Below:—Hsian (clay resonator, front and back views, from Soochow.)

Top left-hand corner:—Hua Mei Chiao tzu (toy whistle, from Shantung.)

Top right-hand corner:—Ku Kuai (toy with free reeds of bamboo, from Nanking.)
Explanation of Plate IX.

1. Hao Tung (brass horn.)
2. Glass horn. From Shantung.
3. La Pa (brass horn.)
4. Hao (brass horn. III. C. 3. From Mr. Galpin’s collection.)
5. Cha Chiao (brass horn.)

1, 3, and 5, probably from the South, closely resemble specimens found in Mid and North China.
Explanation of Plate X.

1. Yao Ch'in (kite harp. From Shanghai.)
2. Chêng (psaltery, strung with brass wire, with plectrum; see Plate XI. ? Cantonese.)
3. Yüeh Ch'in (guitar, with plectrum.)
4. Pi P'a (guitar, with 12 frets.)
5. Hsien tzü (guitar, with snake skin table.)
6. Yang Ch'in (dulcimer. From Hangchow.)
7. La Ch'in (bowed psaltery. From Peking.)
8. Hu Ch'in (Tan Ch'in).
9. " (Ssă Hu).
10. " (Hu Hu).

Excepting 1, 6, and 7, the above are probably from South China.
Explanation of Plate XI.

1. Chéng (psaltery, with silk strings; see Plate X. From Hangchow.)
2. Hsien tzŭ (guitar.)
3. Pi P’a (guitar, with 10 frets.)
4. Hu Ch’in (Tan Ch’in.)
5. " " (Erh Hu.) violins.
6. " " (Hu Hu.)

The above are all from Hangchow.
Explanation of Plate XII.

At the top:—Pai Hsiao (panpipes. S.)

On rack below:—Chi (flute, pair. S.)
   Hsiao (" " ""
   Ti (" " ""

As used at the Confucian ceremonies.

To the left:—Ch'un Kuan (single reed. Sh.)
   Sheng (free reed organ.)
   Yin Ch'ing (cup-gong and beater, from T'ien t'ai.)
   Hua Ku (hand drum. H.)

To the right:—Kuan (double reed.)
   Sheng (organ.)
   Huan Tou (barber's sign. P.)
   Tho Ku (rattle drum.)

In centre and
   below:—Po Fu (drum on stand, small model. H.)
   Mu Yu (wood drum.)
   Chu (box on stand, small model. H.)

To the left:—Gong, with beater.
   Ch'ung Cheng (whistling top. Sh.)
   Gong, with broad flat beater (cf. T'i Tang.)
   Ko Ling (pigeon whistles, one large two small. P.)
   Pang (wood drum with stick attached.)

To the right:—Hsing Erh (pair of small bells. P.)
   Ch'ung Cheng (top, with sticks and string. P.)
   Pai Pan (castanets).
   Chung (bell without clapper, ancient pattern.)

Above Bell:—Kang Tung (? Mongol horn. P.).

On bracket:—He'eian (clay resonators, 6 finger-holes, modern. S.)
   Hsiian (ancient, with 5 finger-holes, model.)

On left hand bracket:—Yü (Wooden Tiger, small model, with beater full-size. H.)

Below Chin:—Chang Ku (Drum, with braces. Sh.).

To the left:—Ch'ing (stone gong, one of set of sixteen. From Anhui.)

To the right:—Man Ton Ku ('Loaf drum,' on folding stand.)

The locality of each instrument is generally marked, when known, with a capital letter.—H.=Hangchow, P.=Peking, S.=Soochow, Sh.=Shanghai.
Explanation of Plate XIII.

Reduced copy of part of a rubbing taken in 1907 from the sculptures in the *Hsiao Tsu T'ang* 孝子堂 in the district of Fei Ch'eng 肥城 in Shantung. The original of this piece measures 16\(\frac{1}{4}\) by 11\(\frac{3}{4}\) inches.

"A large two-horse chariot in front, with a canopy supported upon a central pole mounted with dragons' heads, carries two drummers, beating a leather drum with hanging bells of metal attached, and a band of four musicians [below] with pandean pipes, besides the charioteer: reminding one of the chariot which always accompanied the general to battle in olden times, when, we are told, the drum was sounded for advance, the metal bells as a signal for retreat."—Chinese Art vol. I. p. 37.

The sculptures are attributed to the first century before Christ.

The drum is perhaps the *Kuo* 輝, "a chariot drum used in war," which is mentioned in several ancient books.