

garden at Peking are those which were cast aside by Father Verbiest\* in 1673 (or 1668); which Father Ricci saw at Peking at the beginning of the century, and of which he has described the duplicates at Nanking; and which had come down from the time of the Mongols, or, more precisely, of Kúblái Khan.

Ricci speaks of their age as nearly 250 years in 1599; Verbiest as nearly 300 years in 1668. But these estimates evidently point to the *termination* of the Mongol Dynasty (1368), to which the Chinese would naturally refer their oral chronology. We have seen that Kúblái's reign was the era of flourishing astronomy, and that the instruments are referred to his astronomer Ko Shéu-king; nor does there seem any ground for questioning this. In fact, it being once established that the instruments existed when the Jesuits entered China, all the objections fall to the ground.

We may observe that the *number* of the ancient instruments mentioned in the popular Chinese account agrees with the number of important instruments described by Ricci, and the titles of three at least out of the four seem to indicate the same instruments. The catalogue of the new instruments of 1673 (or 1668) given in the native work also agrees *exactly* with that given by Lecomte.† And in reference to my question as to the *possibility* that one of Verbiest's instruments might have been removed from the terrace to the garden, it is now hardly worth while to repeat Mr. Wylie's assurance that there is no ground whatever for such a supposition. The instruments represented by Lecomte are all still on the terrace, only their positions have been somewhat altered to make room for the two added in last century.

Probably, says Mr. Wylie, more might have been added from Chinese works, especially the biography of Ko Shéu-king. But my kind correspondent was unable to travel beyond the books on his own shelves. Nor was it needful.

It will have been seen that, beautiful as the art and casting of these instruments is, it would be a mistake to suppose that they are entitled to equally high rank in scientific accuracy. Mr. Wylie mentioned the question that had been started to Freiherr von Gumpach, who was for some years Professor of Astronomy in the Peking College. Whilst entirely rejecting the doubts that had been raised as to the age of the Mongol instruments, he said that he had seen those of Tycho Brahe, and the former are quite unworthy to be compared with Tycho's in scientific accuracy.

The doubts expressed have been useful in drawing attention to these remarkable reliques of the era of Kúblái's reign, and of Marco Polo's residence in Cathay, though I fear they are answerable for having added some pages to a work that required no enlargement!

[Mr. Wylie sent a most valuable paper on *The Mongol Astronomical Instruments at Peking* to the Congress of Orientalists held at St. Petersburg, which was reprinted at Shanghai in 1897 in *Chinese Researches*. Some of the astronomical instruments have been removed to Potsdam by the Germans since the siege of the foreign Legations at Peking in 1900.—H. C.]

On these auguries, and on diviners and fortune-tellers, see *Semedo*, p. 118 *seqq.*; *Kidd*, p. 313 (also for preceding references, *Mid. Kingdom*, II. 152; *Gaubil*, 136).

NOTE 2.—†-The real cycle of the Mongols, which was also that of the Chinese, runs: 1. Rat; 2. Ox; 3. Tiger; 4. Hare; 5. Dragon; 6. Serpent; 7. Horse; 8. Sheep; 9. Ape; 10. Cock; 11. Dog; 12. Swine. But as such a cycle [12 earthly branches, *Ti-chih*] is too short to avoid confusion, it is combined with a co-efficient cycle of *ten* epithets [celestial Stems, *T'ien-kan*] in such wise as to produce a 60-year cycle of compound names before the same shall recur. These co-efficient epithets are found in four different forms: (1) From the Elements: Wood, Fire, Earth, Metal, Water, attaching to each a masculine and feminine attribute so as to make ten epithets. (2) From the Colours: Blue, Red, Yellow, White, Black, similarly treated. (3) By

\* [Ferdinand Verbiest, S. J., was born at Pitthens, near Courtrai; he arrived in China in 1659 and died at Peking on the 29th January, 1688.—H. C.]

† We have attached letters A, B, C, to indicate the correspondences of the ancient instruments, and cyphers 1, 2, 3, to indicate the correspondences of the modern instruments.