http://www.geology.19thcenturyscience.org/books/1858-Humboldt-Cosmos/README.htm

tude and latitude, and to the length of the day; but, notwithstanding the constant reference to the advantages of astronomical results over mere itinerary measurements by land and sea, it is, unfortunately, impossible to ascertain, among these uncertain positions (upward of 2500 of which are given), the nature of the data on which they are based, and the relative probability which may be ascribed to them, from the itineraries then in existence.

The entire ignorance of the polarity of the magnetic needle, and, consequently, of the use of the compass (which, twelve centuries and a half before the time of Ptolemy, under the Chinese Emperor Tsing-wang, had been used, together with a *way measurer*, in the construction of the magnetic cars), caused the most perfect of the itineraries of the Greeks and Romans to be extremely uncertain, owing to the deficiency of means for learning with certainty the direction or the line which formed the angle with the meridian.*

In proportion as a better knowledge has been acquired, in modern times, of the Indian and ancient Persian (or Zend) languages, we are more and more astonished to find that a great portion of the geographical nomenclature of Ptolemy may be regarded as an historical monument of the commercial relations existing between the West and the remotest regions of Southern and Central Asia.† We may reckon the knowledge of the complete insulation of the Caspian Sea as one of the most important results of these relations, but it was not

* See a collection of the most striking instances of Greek and Roman errors, regarding the directions of different mountain chains, in the introduction to my *Asie Centrale*, t. i., p. xxxvii.–xl. Most satisfactory investigations respecting the uncertainty of the numerical bases of Ptolemy's positions are to be found in a treatise of Ukert, in the *Rheinische Museum für Philologie*, Jahrg., vi., 1838, s. 314–324.

† For examples of Zend and Sanscrit words which have been preserved to us in Ptolemy's Geography, see Lassen, *Diss. de Taproban. Insula*, p. 6, 9, and 17; Burnouf's *Comment. sur le Yaçna*, t. i., p. xciii.–cxx. and clxxxi.–clxxxv.; and my *Examen Crit. de l'Hist. de la Géogr.*, t. i., p. 45–49. In a few cases Ptolemy gives both the Sanscrit names and their significations, as, for the island of Java, "barley island," Ἰαβαδίου, ὁ σημαινει κριθῆς νῆσος, Ptol., vii., 2 (Wilhelm von Humboldt, *Ueber die Kawi-Sprache*, bd. i., s. 60–63). According to Buschmann, the two-stalked barley, *Hordeum distichon*, is still termed in the principal Indian languages (as in Hindostanee, Bengalee, and Nepaulese, and in the Mahratta, Guzerat, and Cingalese languages), as well as in Persian and Malay, *yava*, *dschav*, or *dschau*, and in the language of Orissa, *yaa*. (Compare the Indian translation of the Bible, in the passage Joh., vi., 9, and 13, and Ainslie, *Materia Medica of Hindostan*, Madras, 1813, p. 217.)