S.m.3. SYED AFTAB HUSAIN RIZVI–Some Aspects of History of Indian Mathematics in 18th and early 19th Century–1984–Dr. Wazir Hasan Abdi and Dr. T. Thrivikraman

This thesis is an attempt to throw light on the works of some Indian Mathematicians who wrote in Arabic or Persian. In the introductory chapter, an outline of general history of Mathematics during the eighteenth and nineteenth centuries has been sketched. During that period, there were two streams of Mathematical activity. On one side, many eminent scholars, who wrote in Sanskrit, held the field as before without being much influenced by other sources. On the other side, there were scholars, whose writings were based on Arabic and Persian texts but who occasionally drew upon other sources also.

In chapter II, importance of Geometry and transmission of Euclidean geometry in India has been discussed and contribution of Indian mathematicians in this area outlined.

The third chapter is devoted to the life and work of an important Indian Mathematician, Ghulam Husain Jaunpuri (b. 1790). One of his works, Jame-i-Bahadurkhani, has been called an "Encyclopaedia of Mathematical Sciences". A portion of this work dealing with Euclidean Geometry has been translated here into English.

Chapter IV is based on Section I of Jame-i-Bahadurkhani which deals with Definitions, Objects and Principles of Geometry. A detailed critical study of the concepts and comparison with similar literature has been made. In this connection, the work of contemporaries like Mohammed Hasan b. Didar Ali, Mir Mohammed Hashim, Sheikh Barkat Allahabadi, Jagannath Samrat, Diwan Kanhji Mal Kayastha and some modern writers have been specially mentioned.

Chapter V is concerned with the Theorems and Problems contained in Section

two dealing with the properties of straight lines, Angles and Rectilinear surfaces. It consists of 49 Propositions in which 38 are taken from the Book I and II from Book of II of Tahrir-i-Uqlides by Nasir al-Din al Tusi, 1 from Appollonius work and in 9 Propositions, proofs are given by Ghulam Husain.

In Chapter VI, Properties of Circles and Arcs, Lines and Angles, which are produced by the comparison of Circles are established. This is Section 3 of Jame-i-Bahadurkhani. It consists of 35 Propositions, in which 28 are from Book III, 6 from Book IV and 1 from Blunt's book. A comparative study of these propositions have been done.

The first 21 Propositions of Chapter VII bring out the logic behind the theory of Ratios and the Rules of Simple, Compound and Derivative Proportion. This theory of Proportion is aplied in proving 18 Propositions of Book VI concerning similar triangles, parallelograms and polygons. Three propositions are taken from Nasir al-Din al-Tusi's version of Ptolemy's Megale Syntax, one from Conic sections of Archimedes, two from Talimat of Ibn Haitham. Fifteen propositions are claimed by Ghulam Husain to be his own discovery.