ROLE OF THE NESTORIANS AS THE CONNECTING LINK BETWEEN GREEK AND ARABIC MEDICINE*

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This paper deals with a period of history which is rather difficult to define, for its study includes the last part of the ancient period and the early centuries of the Middle Ages. Even from the point of view of Mediterranean culture it is difficult to say when ancient thought ended and medieval thought began. If the Fathers of the Church ushered in the medieval period and ended pagan civilization, their chief accomplishment, considered from the standpoint of science and world culture, lay in the fact that they created a new contact between Greek and Oriental thought. It is important to conceive of Ancient Civilization, the Middle Ages and Renaissance as not exclusive but as overlapping. Certainly in the period of history under consideration antiquity merges by imperceptible gradations into the Middle Ages.

In many students of medical history and medical science the mention of the Middle or Dark Ages creates a feeling of disinterest, if not antagonism. The term Dark Ages implies a period of regression, a time of endless controversy, the fruitless arguments of Scholasticism. If one admires—and who does not—that marvelous bloom of Greek art, science and culture in the short period of the sixth to the fourth centuries before the Christian Era, well termed the "Greek Miracle," one cannot but be intrigued by the question of how Greek culture, which so nearly perished, was transmitted through the Dark Ages to renascent Europe. As Sarton[1] so clearly states in his Introduction to the History of Science:

"From the point of view of the history of science transmission is as essential as discovery. If the results of

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Ptolemy's investigations [in astronomy] had been hidden instead of published, or if they had been lost in transit, they would be almost as if they had never been. . . .

If there were no other reason to study medieval science than to find out how ancient knowledge was handed down to us, that reason would be sufficient. The average man of science, perhaps lacking in historical training, cannot imagine the complexity of the problems involved. The transmission of modern science is almost automatic; a discovery published in any scientific journal is within a relatively short time quoted and discussed in a number of other papers which circulate all over the world. Any scientist, working along the same line, is bound to hear of it, either directly or indirectly, and in the latter case he will have no difficulty in obtaining a copy of the original text. A hundred agencies have solved the problem of transmission so completely that the individual scientist does not think of it any more. In the Middle Ages these agencies did not exist, publication in manuscript form was necessarily very limited, and it could never be standardized. Moreover, political vicissitudes caused innumerable difficulties. Some discoveries had to cross in slow stages the whole of Asia and Europe before reaching the West and being integrated into the main scientific current which has come down to us. Some writings had to be translated many times before reaching their final assimilation; thus many Greek texts became a part of our intellectual patrimony only after having been translated from Greek to Syriac, from Syriac to Arabic, then into Latin, and finally into our own language. These translations were imperfect, and in the case of important works, seldom unique; thus occurred conflicting traditions which caused new difficulties.

It does not matter whether we like mediaeval science or not; the fact remains that we cannot arbitrarily neglect it, if we would understand the continuity of human progress. Even if mediaeval scientists had not made any original contributions we should still be obliged to study their activity, else it would be impossible to explain the origin of our present knowledge. Whatever we learned from the

ancients could not be taught us directly; it could only reach us by some continuous traditions which it is our duty to ferret out."

So to students of medical history there are now available many brief, more or less accurate accounts of how Greek science and Greek culture were transmitted through the Mesopotamian schools, especially those of Edessa and Gondi-Sapor, in the translations from the Greek into Syriac or Aramaic, and from the Syriac into Arabic, by the rather small, unorthodox Christian sect of Nestorians who dominated these Mesopotamian schools during the third to the seventh centuries of the Christian era. But the mere recording of how Greek culture and Greek medicine was transmitted by the Nestorians to the Arabic conquerors does not tell why this Christian community of Semitic race was the transmitting medium. It is the *why* rather than the *how* which has interested the writer. In this paper an attempt will be made to analyze the several factors that resulted in the Nestorians playing this rôle of the connecting link between Greek and Arabic medicine.

Who were the Nestorians and their ancestors? Where did they live? What were the political and economic factors in the history of that time that molded them and determined their course? How was their national character influenced by the religion and philosophy of the period? These are some of the questions that naturally come to mind. Their answers will very largely explain the *why* of the title of this communication.

Exact knowledge of the origin of the Nestorians is lacking. In all probability their ancestors were a Semitic race, known as the Aramaeans, which migrated north from the Arabian peninsula into what is now spoken of as Syria, and spread eastward into what the Greeks later called Mesopotamia. The Arab chroniclers referred to them as the Nabateans. I am indebted to Professor Hitti of Princeton University for the data regarding the probable origin of the Nestorians. (Map I.)

For centuries as Aramaeans they had been given to commerce and by their caravans had come in contact with

Map I—Probable Origin of Aramaeans, with Their Later Growth and Distribution through Mesopotamia, Khurdistan and Persia. (From Breasted's "Maps of Ancient Civilization.")

countries north, south, east and west of Mesopotamia. Conquered by the forces of Alexander they remained under Greek control until the Seleucidae, torn by internal strife and political intrigue, gave up the defense of their Mesopotamian possessions. There then arose small kingdoms or principalities in northern Mesopotamia, among them Osrhoëne and Adiabene. The small kingdom of Osrhoëne is of special interest to our subject, for it was in this principality that we first hear of Edessa, its capital. History[2] fairly definitely assigns the founding or rebuilding of Edessa to Seleucus Nicator in 304 B.C. After the withdrawal of the Seleucidae, Edessa was the capital of Osrhoëne under the rule of a line of kings of a mixed race of Nabatean, Armenian and Parthian origin. Barhebraeus[3], speaking of these people, says: "Parthian, Persian, Edessan and Armenian are all one."

The chronicle and chronology of the Osrhoëne kings are based upon a single MS in the Vatican, known as the "Chronicle of Dionysios of Tell-Mahre" written in 776 A.D. and translated by Assemani in his "Bibliotheca Orientalis." This was retranslated by Noëldeke[4] and this revised and corrected Chronicle is given in its relation to Edessan literature and theology by Duval[5] in his "Histoire d'Edesse."

Edessa is the Greek name for what was called by the Assyrians Ourhai, by the Arabs Ar-Ruha, and today still exists under Turkish rule as the town of Urfa. After its founding in the third century B.C. it remained a pagan town until about the middle of the second century when it is said to have been the first city in Mesopotamia to be Christianized. There is a most attractive legend, inaccurate though it be chronologically, connected with the conversion of the city to Christianity: Abgar Oukhama, then reigning over Osrhoëne, hearing of the miraculous cures of Jesus, sent him a letter asking him to come to Edessa to cure him, the King, of a fatal disease. Jesus replied to Abgar:

"Thou art fortunate, thou who believest in me, not having seen me. For it is written of me that those who see me do not believe in me, but those who do not see me, believe in

me. As to your asking me to come to you, the work for which I was sent is about to be accomplished and I am to return to my Father who sent me. After I have ascended to Him I shall send you one of my disciples who will cure your sickness and will convert you and those about you to life eternal. The city shall be blessed and no enemy shall prevail against it."[6]

This "Legend of Abgar" states that Addai, supposedly one of the seventy apostles, was sent by the disciple Judas Thomas, who healed Abgar and as a result of this miracle and his preaching converted Edessa to Christianity in 32 A.D., and built a church from the money which King Abgar gave him.

So we find the Assyrians at the beginning of their Christianity a somewhat mixed race living in a land which favored their coming in contact with several of the great cultures, Greek to the north, Roman to the west, Egyptian or Ptolemaic to the south and Persian to the east. Geographically they occupied territory that lay on the main commercial routes between the East and the West, the North and the South.

Cathay had certain commodities, especially silk, that the Roman Empire needed and coveted. The great silk ways were the result of this supply and demand. With the establishment of Roman power in the West and the domination of the Han Dynasty in China this caravan route between the Mediterranean and China emerges into history. About the middle of the second century B.C. there began one of those primeval migrations from the borders of China to the West. What the urge was is not known, but the Indo-Scythians, spoken of in Chinese as the Yüeh Chih tribe, living in what is now the province of Kansu, left their ancestral home and began swarming to the west and south. Within a scant two centuries they had taken over the eastern provinces of what had been Alexander's empire, conquered part of Persia, and had become a threat to Rome. When China conquered eastern Turkestan a caravan route was opened between China across the Indo-Scythian kingdom to the Persian and Roman Orient.

MAP II—Map of the Second Empire, Showing Sassanian Empire and Great Silk Way from Mediterranean Eastward to China. (From Rawlinson's "Seventh Great Oriental Dynasty.")

(Map II.) Thomas Francis Carter, in his monograph on the "Invention of Printing in China,"[7] one of the most scholarly pieces of research of the past decade, discusses the great silk ways; he lists the peach and the apricot, silk and tea, porcelain and paper, playing cards and probably gunpowder and the compass as some of China's gifts to the West. The grape and alfalfa, the carrot, glass manufacture, Nestorian Christianity and Mohammedanism, the alphabet and some impulses of Greek art are a few of the things that the countries of the East received in return. Berthold Laufer[8] states that from the Christian era down to the

Mongol period the knowledge of twenty-four agricultural products passed from China to Persia and westward, and sixty-eight from west to east.

Silk was probably the most desired Chinese product. It reached Europe sometime before the Christian era, but the process of producing silk was kept a secret until the sixth century. Virgil and other Roman workers considered silk a vegetable product and thought it was combed from trees. It was not until the reign of Justinian in the middle of the sixth century that Nestorian missionaries returning from the Far East reported that silk was not "combed from trees," but was made by caterpillars. At Justinian's instigation these priests journeyed to Khotan in Chinese Turkestan and returned with the precious caterpillar eggs hidden in the long bamboo staff of one of their number. If this story told by Greek chroniclers is true, the culture of the silkworm in Europe and the Near East was started from the eggs carried in the bamboo staff of a Nestorian missionary. This geographical location of the Assyrians and their contacts with the great civilizations comprise the first great factor in the Nestorian's rôle in medicine.

This mention of the Nestorian missionary brings up the subject of the influence of religion and philosophy in the evolution of the Assyrian people, and it is a most important influence. Following the introduction of Christianity the inhabitants of Osrhoëne and Adiabene took a very active part in the early diffusion of Christianity throughout Asia Minor, Egypt and Mesopotamia. They were especially active in collecting and translating the Scriptures, in fact were the first Christian sect to translate the Old Testament from the Hebrew into their own vernacular, the Syriac, in what has ever since been known as the Peshitta version. This was completed about the middle of the second century. The Jews had begun and were still occupied in editing the Talmud. There was a very active argument among these Semitic scholars as to what was and was not the authorized Scripture. Like all true Semites the Assyrians were great respecters of Authority, but there was bitter and constant argument as to what was the ultimate authority. It is

most interesting to note here, because of its bearing on their subsequent familiarity with Greek in relation to medicine, that these Assyrian scholars applied themselves diligently to the study of Greek so that they could read at first hand the Septuagint version of the Old Testament which had been completed in Alexandria in 132 B.C. This Greek version was made by a group of about seventy Alexandrian Jews who had forgotten their Aramaic vernacular. It antedated by at least a century the standard Hebrew text of the Sopherim. The presence of two separate Old Testament canons was the cause of bitter argument and controversy, and it was because of this that the Aramaean scholars in Edessa published the Peshitta version and became familiar with the Greek language and by it Greek science, Greek medicine and Greek literature. This is the second great factor in the Nestorian rôle in medicine.

The third great factor was the establishment of the great school of Edessa. The interest of the early Assyrian church fathers in the Greek version of the Scriptures and the resulting contacts with Greek scholarship created an atmosphere of study and investigation in the Assyrian towns, especially in Edessa and Nisibis. The latter town had changed hands several times between warring Roman emperors and Sassanian Persian kings. The emperor Julian died in 364 A.D. while fighting with the Persians. His successor, Jovian, made a rather ignominious treaty with the Sassanian Persian King Sapor II, in which he gave up Nisibis to the Persians. This resulted in a large part of the rich and learned Christian inhabitants of Nisibis migrating from that city to their co-religionists in Edessa. In the latter city, probably in 363-364 A.D., they organized the School of Edessa which, because its founders had come from Persian territory, came to be known as the "Persian School" of Edessa. In this school, because of the previous activities of the church fathers in translating the Scriptures, theology was the major subject, but medicine was growing as a study, and rapidly coming to the fore in the attention it attracted. A hospital is said to have been founded by St. Ephraim and was used by the teachers of medicine in the school for clinical instruction.

The Ecumenical Council of Nicea in 325 had proceeded to define the Catholic faith and had apparently put an end to the Arian controversy. It is extremely difficult to reconcile the ideas of Monotheism and the Trinity, and to explain the relations of the persons of the Trinity to one another. The attempts to do so have resulted in endless arguments and these constitute a good part of Patristic literature. The Council of Nicea may have defined the orthodox faith, but it started many church controversies, only one of which is of interest in connection with the subject of this paper.

About the time of the founding of the Persian School in Edessa there was born near Mount Taurus an Aramaean priest named Nestorios. He became the Patriarch of Constantinople in 428. He early came into conflict with the orthodox fathers of the church because of his heretical doctrines, consisting in his denial of the complete mergence of the divine and human natures in the person of Christ and especially in his assertion that Mary, the Mother of Christ, should not be called the Mother of God. For his heresies he was deposed at the Council of Ephesus in 431, and he and his many adherents in the Assyrian Church were excommunicated. His followers were as a result called Nestorians, and from the time of 431 have constituted the so-called Eastern Syrian, or Nestorian, Church. This Church row is perhaps in itself uninteresting, but it had a profound influence on medical history.

The Nestorians, for we may now call the Eastern Syrians Nestorians, were largely concentrated in upper Mesopotamia and east of the Tigris. Edessa was their headquarters for a time, and the famous school became the center of their teaching. By 488 the controversy had flared to renewed activity and Bishop Cyrus of Alexandria, the arch-enemy of the Nestorians, persuaded the Emperor Zeno to abolish the School. This was done in 489.[9] This great school, the center of culture for the East, came abruptly to an end. The teachers and disciples were convicted of heresy, and expelled from Edessa. Many of them were given asylum in Persia, where their subsequent history will be

discussed later. The site occupied by the famous school was used to erect a new orthodox church and given the significant name of Our Lady, Mother of God.

The banishment of the Nestorians from the school and city of Edessa had several interesting results. The zealots became missionaries; many of the teachers and students turned to what they considered more profitable intellectual activity, that is, the study and practice of medicine. As Sarton[10] so well puts it:

"The innate jealousy and irritability of theologians is a centrifugal force which continuously tends to drive farther and farther away those of them whose intellectual submission and conformity are not absolute. The cultural diffusion is thus accomplished not only by missionaries, but also by religious refugees and exiles, by those cast out, by heretics. The Nestorian heresy which originated in 431 is one of those great centrifugal forces due to theological hatred: it pushed Christianity across mountains and deserts as far as China, and thus became a very important link between East and West."

The Nestorians went on into Southern India and in Malabar organized a Nestorian church and community which still exists as a Christian sect. The church is known as that of Mar Thuma, or St. Thomas. This is the fourth great factor.

This is not the occasion to describe in detail the far-reaching tours of the Nestorian missionaries. But from the fifth century on, following their expulsion from Edessa and their establishment in Persia, an increasing number of these Nestorian zealots penetrated eastward, reaching China, Siberia and India. This has been established by the excavations in Turkestan and China, where remains of Christian churches have been unearthed and MSS in Syriac and Persian, with the correspondence of these priests with their mother churches in Mesopotamia have been discovered. These have more than confirmed the amazing record carved in the famous Si-an-fu stone monument describing the introduction of Christianity into China in the seventh century by the Nestorian missionaries.[11]

Following the closing of the school in Edessa many of the theologians, under the leadership of Bar-Soma, the deposed head of the School, went back to Nisibis in Persian territory, whence the founders of the school had originally come, and established a new school there.[12] Other teachers and pupils, perhaps less zealous in their strict Nestorianism, accepted the asylum offered them by the Sassanian King Kobad and migrated to Gondi-Sapor in southwestern Persia. They brought with them Syriac translations of Greek medical works of Hippocrates and Galen by Sergius of Ra's al-ain, and the earliest Syriac translations of Aristotle by Probos.[13] Here in Gondi-Sapor they established the famous school where some of their co-religionists had previously, about 350, made that city the See of a bishop of the Nestorian Church.[14] Kobad was friendly to them because of help the Nestorians had given him in his escape to the Turks before regaining his throne.[15] (See Fig. 3.)

Attention must be given to the history of this city. It was founded in 260 A.D. by Sapor I, son of Ardashir Babakhan, founder of the Sassanian Dynasty of Persia, soon after his defeat and capture of the Roman Emperor Valerian and the sacking of the famous city of Antioch. (See Figs. 1 and 2.) Sapor named the new city Veh-az-Andev-i-Sapor, meaning in Pahlawi "Sapor's Better than Antioch," a name which was gradually changed to Gondi-Sapor, or in Arabic, Jundi-Sabur. It was situated in southwestern Persia in Susiana, what is now known as the province of Khuzistan, not far from Susa. The Mohammedans captured the city in 638, in the reign of Omar, the second Khalif. By the thirteenth century, however, it had almost disappeared. There is no trace of the city left at present except vague mounds marking the former walls and buildings, and the site is partly occupied by a small village called Shahabad. Sir Henry Rawlinson[16] and Layard[17] are two of the last travelers to describe the present remains of this city of glorious record.

The Persian school of medicine in Gondi-Sapor, always under Nestorian inspiration and management, flourished from the time of Nushirwan, 530 A.D., Kobad's successor,

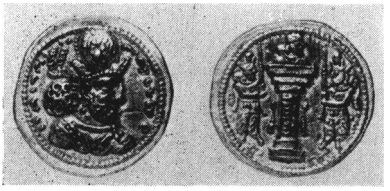

FIGURE 1—Gold Coin of Sápor I, 253-260 A.D. Founder of the City of Gondi-Sápor.

FIGURE 2—Silver Coin of Emperor Valerian. Captured by Sápor I.

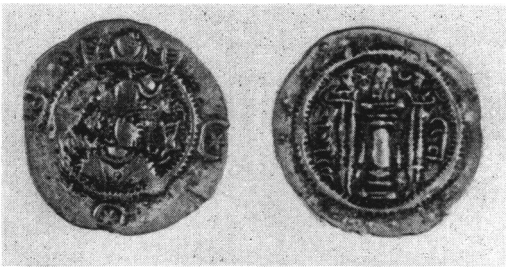

FIGURE 3—Silver Coin of Kobad.
Offered Asylum to the Nestorians in Gondi-Sápor.

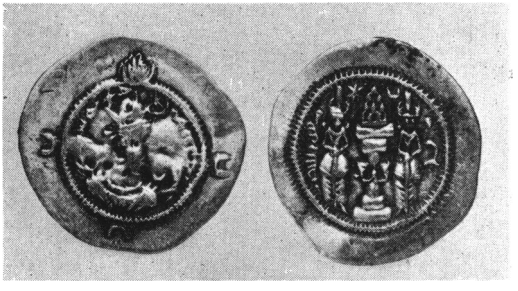

FIGURE 4—Silver Coin of Chosroe Nushirwan.
Founder of the Medical School of Gondi-Sápor.

until at least the end of the tenth century, when Baghdad replaced it as the center of medical teaching. The greatest impetus to the school was given by the most famous of the Sassanian kings, Nushirwan, called Adil, or the Just. (See Fig. 4.) He not only gave the Nestorian teachers in the school every advantage and encouragement, but he increased the prestige of the institution by welcoming to it the Greek Neo-Platonists from the school of Athens, when it was closed in 529 A.D. It became, during Nushirwan's long reign of forty-eight years, the greatest intellectual center of the time. Within its walls Greek, Jewish, Nestorian, Persian and Hindu thought and experience were freely exchanged, but the Nestorian teachers were the most prominent and the teaching was done largely in Syriac or Aramaic, because the texts of the Greeks, Persians, Jews and Hindus were translations in that language. It was during Nushirwan's long reign that Pahlawi literature reached its zenith. He ordered the historical annals of Persia to be compiled and from the material collected the greatest Persian epic was composed by the poet Firdausi at the end of the tenth century. Under the great king's aegis Persian translations were made of Plato and Aristotle.

Nushirwan became the hero of story and song by later historians and poets who lauded his wisdom and justice, for he is always spoken of as Nushirwan Adil, the Just. In Sádi's Gulistan[18] there is a simple tale, in Persian, typical of his justice, one of the many in the Book of Kings. It reads: They have related that at a hunting ground they were roasting the game for Nushirwan, the Just, but there was no salt. A slave was dispatched to a village for the needed seasoning. Nushirwan said, "Be sure that you obtain the salt at a price, that a bad custom be not established and the village be not ruined." They asked, "What loss could come from such a trifle?" He replied, "The origin of tyranny in the world was small at first; others have added to it, till it has reached its present state." Stanzas: 1. If the King were to eat one apple from the orchard of a subject, his slaves would pluck up the

tree by its roots. 2. For five eggs which the Sultan might deem lawful plunder, his army would run through a thousand fowls with spits.

To return to the Great School: Opposite it was built the famous hospital, the Bimaristan, a Persian name used subsequently for all the great hospitals in Baghdad, Damascus and Cairo which the Arabs copied from this model in Gondi-Sapor. Describing this hospital Ibn-al-Qifti[19] says (Quoted from Ahmed Issa Bey[20]):

"They [the physicians] made rapid progress in the science, developed new methods in the treatment of disease along pharmacological lines, to the point that their therapy was judged superior to that of the Greeks and the Hindus. Furthermore these physicians adopted the scientific methods of other peoples and modified them by their own discoveries. They elaborated medical laws and recorded the work that had been developed.

In the twentieth year of Nushirwan's reign the physicians of Gondi-Sapor convened by order of the sovereign to discuss diversified scientific subjects. Their debates were recorded. This memorable seance was presided over by Gibrail Dorostbad, the special physician to the King, assisted by the Sofistai and their colleagues, by Yohanna and a large number of other physicians.

During several centuries the School and Bimaristan of Gondi-Sapor held first place in the world of Medicine and Science. It was from among their students that Persia, Iraq and Syria recruited their physicians. Pupils from all nationalities gathered in Gondi-Sapor for instruction. Furthermore the Islamic conquerors did not hesitate to call into service the physicians trained in this school."

The Prophet and the first Khalifs were treated by Harith Ibn Kalada el Thakafi and by his son Nadr Ibn Harith, graduates of Gondi-Sapor. The Ummayad Khalifs were cared for by Ibn Uthâl, a Christian practitioner of Gondi-Sapor, and other diplomates of that school. The trust confided in the school of Gondi-Sapor and its graduates was deserved primarily for its eminence and the

renown of the faculty and the ability of its graduates. But there was one factor, little appreciated in the coming of the Nestorians to the Persian school, and that had to do with the excommunication and banishment of the Nestorians from the orthodox Catholic church. The denial of the Motherhood of God in Mary appealed to both the Persian Zoroastrians and to the later conquerors, the Mohammedans, but especially the latter. In what is almost the last Sura of the Qu'ran, the one hundred and twelfth, entitled "The Unity," four short sentences sum up the denial of the Trinity and of the Virgin Birth:

1. Say, He Allah, is one.
2. Allah is He on whom all depend.
3. He begets not, nor is he begotten.
4. And none else is like unto Him.

It was the third line of this Sura, in the rich melodious Arabic *"Lam Yalid wa lam Yulad"* which set the Nestorians apart from other Christian infidels and gave them special favor in the eyes of the prophet and his succeeding Khalifs. From this Nestorian community, educated and wise in the medical science of that era above all others, the nascent and virile Arabs eagerly sought their earliest and their later training in Greek and Galenic medicine, and rekindled that torch of ancient learning with the whirlwind of their newly awakened interest and enthusiasm for learning.

From Gondi-Sapor went a long line of distinguished physicians: the famous family of the Bakhtīshūs, the Mēshus or the Mesué, to mention only two renowned families, to Baghdad, to Damascus, to Cairo where they organized famous hospitals, modeled after the great Bimaristan of that Persian city. For a most interesting account of these Bimaristans, their buildings, their teaching clinics with in- and out-patient buildings, with medical, surgical, orthopedic and ophthalmological services, all copies of the famous hospital in Gondi-Sapor, the reader is recommended to study the monograph of Dr. Ahmed Issa Bey[20] on the hospitals of the Islamic period. It is a most surpris-

ing and illuminating exposition and proof that Arabian medicine made full use of the lore handed down through the Nestorians.

In the preparation of this paper the author has consulted original sources in Latin, Syriac, Arabic and Persian but he wishes to express his indebtedness to Sarton's "Introduction to the History of Science," Carter's "Invention of Printing in China," Ahmed Issa Bey's "Histoire des Bimaristan," and especially to Professor Philip K. Hitti of Princeton University for his many suggestions and constructive criticism.

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