THREE STUDIES ON CLIMATE AND HUMAN VARIETY IN FRANCE

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Bachelor of Arts in Arts and Sciences

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Stillwater, Oklahoma

1985

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF ARTS
July, 1989

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Thesis Approved:

Thesis Advisor

Dean of the Graduate College

PREFACE

This study explores three variants of climate theory in France by Jean Bodin, Montesquieu, and Buffon, the origins of which are traceable back to Ancient Greece. It shows that arguments about the primacy of climatic influence in human affairs were of central importance to each of these theorists despite differences in the historical setting within which their views were set forth and their overriding scholarly and theoretical interests. As we will see, in each case the problems these theorists wanted to solve was that of human diversity. Climate theory was crucial in their attempts to understand both why there were so many manifestly different kinds of people and with them, differing laws, customs, institutions, physical shapes, colors, and size. In addition, climate theory served for Bodin to explain the changes that had befallen humans since the Fall, for Montesquieu to repudiate Catholic dogma, and for Buffon to document the unity of the human species.

In brief, climate theory means the combination of physical factors -- air temperature, winds, geography, exposure to the sun, proximity to water, exact location -- to which people are exposed. By an examination of these elements these theorists believed that they could account

for the distinguishing characteristics that differentiated whole groups. It was believed that a careful documentation of climate would explain why difference itself existed.

The tenacity with which theories of climate have perpetuated themselves over two millennia of Western civilization attests to the powerful appeal such notions had for those seeking to explain phenomena that at first were startling and perplexing. From the first efforts to understand localized disease and explain human variation in Greek medicine to contemporary examinations of weather patterns and their effects on human development, the idea that climate profoundly influenced not just the physical circumstances but also the social, psychological, and biological makeup of diverse peoples has attracted numerous adherents. By examining the work of Bodin, Montesquieu, and Buffon this study seeks to explain the attraction, inner workings, and multiple applications of climate theory in France.

Jean Bodin -- jurist, historian, and political theorist -- lived in the era of the French Wars of Religion, an epoch of profound social, political, and religious upheaval. Bodin focused on "universal history" in an effort to throw light on the events of his time. Deeply troubled by the conflict between Catholic and Protestant he sought to explain why diverse laws, customs, and institutions -- especially religious institutions -- had come to exist. He

pondered why so many different kinds of people existed when all existence owed its origin to God
the creator, whose powers had first breathed life in human beings in the Garden. Since the time of that distant paradise much had changed. The Fall inaugurated a ceaseless chain of permutations and alterations in human history so that by his time the numerous peoples known, and their concomitant varieties of laws, customs, and institutions, appeared to contradict the Bible's central tenet of common human descent. Bodin used his concept of "universal history" -- within which his climate theory was embedded -- to explain what had initiated these events and to reconcile them with the Biblical account of Genesis. It was within this framework of dual necessity -- explaining the peculiarities of historical development and the deviations that had occurred since the Creation, that Bodin gathered and used ideas about climatic influences. Despite the essential sameness of all human beings as created by God, diversity in both physical form and social life had appeared, thanks to the formative role of climate. Bodin's ultimate argument was that because climatic influence could be only partially mitigated by human efforts, diversity had to be recognized and tolerated. This overall historical interpretation buttressed the political and social cause most important to him -- encouraging tolerance among the warring religious factions of sixteenth-century France.

Montesquieu lived in an age substantially different from that of Bodin. On the surface it appeared that the burning issues of Bodin's time had been resolved in favor of the French crown and Catholicism. The appearance of calm was misleading, however, for forces -- economic, social, and political -- were slowly gathering that would cause deep conflicts in the second half of the eighteenth century and ultimately help bring revolution to France. Traditional precepts of a divinely-inspired social order created and perpetuated by the laws of God were submitted to the calculating stare of Reason and found wanting. New explanations appeared that challenged old canons of thought and ushered in an era of intellectual fermentation. "Natural Law" gradually supplanted the laws of the exclusive Christian God, but it in turn seemed -- as recognition of human diversity intensified -- increasingly inadequate to explain the maintenance of order in the world of human affairs. Diversity was a vexed problem to Montesquieu because it seemed to contradict the universal application of Natural Law. Thus when attempting to explain the laws of nature and those of human societies, Montesquieu appealed to climate as one way of making comprehensible the differences that existed between humans -- and their various "positive laws" -- and still remain faithful to universal Natural Law. By turning to climate Montesquieu was able to retain Natural Law, explain the diversity immanent in human societies, and never waver from the belief that Natural Law was best

exemplified in Europe, where political rule, morality, and social development best conformed to Natural Law. Thus climate theory allowed Montesquieu at one and the same time to relative cultural values and norms (for which he has been applauded as "the founder of sociology") and to reassert over and beyond diversity the superiority of the European way of doing things.

Although Buffon's subject matter -- natural history -- differed from Montesquieu's, he nonetheless shared many of Montesquieu's characteristic concerns: the laws of development governing societies; the variety of human beings throughout the world; and in addition an interest in reconciling human diversity with the belief that all humans emanated from one source, the white European. Working within his system of natural history, Buffon was able to create a vast yet deceptively simple explanation that resolved the tension that existed between the variety of humans and his conviction that Europe epitomized the high point of development. His theory of climate fulfilled this need by preserving all of these tenets -- unity, variety, levels of development -- by postulating that all human beings had deviated from the European model because of migration, climatic exposure, and the consumption of poor foodstuffs.

The theme which united all three theorists was the need to decipher why different kinds of human beings inhabited the earth; why they had developed peculiar social practices

and customs; and why their institutions differed from those most familiar to them. The long tradition of ascribing such differences to climate admirably fulfilled their requirements.

I would like to extend my deepest gratitude to the faculty members at Oklahoma State University who facilitated my graduate studies by responding to my frequent and often untimely queries. I extend special thanks to my major advisor, Dr. Elizabeth A. Williams, for her friendship, unflagging support, critical readings, and unswerving devotion to serious scholarship. Her ability to direct students through the often labyrinthine corridors of graduate study is much appreciated, especially given that I was her first test case. Dr. Bryant Tip Ragan deserves special consideration for the many favors extended and for his enthusiastic love of French history, an enthusiasm that has affected me deeply. I would also like to single out Dr. Richard C. Rohrs for the help he gave me early in my studies, his informed readings of rough drafts, and for his devotion to graduate studies. And I must not leave out Dr. Paul Bischoff who graciously agreed to become a reader on short notice. Finally I would like to express my deepest appreciation to Lionel M. Jensen, friend and scholar, whose commitment to scholarship, intellectual honesty, and the life of the mind will remain with me always. He is an example from whom many could profit.

In addition I would like to extend my thanks to those employees of the Edmon Low Library, especially those who work in the Interlibrary Loan Department, for their assiduous procurement of every work requested.

I save for last the person who deserves the most credit for the completion of my studies at Oklahoma State University. My wife, Rhonda, has never wavered in her efforts to make my studies both enjoyable and productive: without her I would have been unable to enjoy either success or happiness. Words cannot adequately convey my appreciation. One other person, my daughter Lauren, deserves special recognition for the joy and love she has brought to our lives over the past three years.

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CHAPTER I

THE ETYMOLOGY OF CLIMATE AND ITS USE BY THE GREEKS

The word klima originated in Ancient Greece and was first used to denote the slope or inclination of a piece of ground. In Greece this restricted definition gradually evolved to mean the slope or inclination of either a specific or general piece of ground, be it a mountainous region, a plain, or a valley. The original definition of klima underwent further refinement and expansion in Latin. The Latin word climata, too, meant the slope, the rise, or the gradient of the earth's surface. Over time the definition of climata continued to expand and by the first century B. C. Roman astronomers and geographers associated climata with the parallels of latitude extending from the equator to the poles. This division of the earth into climata or zones of latitude was also used to determine the length of the longest day in each zone.

The originally restricted meaning of climata eventually took on an expanded definition in Roman astrology and geography; it was subsequently associated with the alleged or perceived slope or inclination of the earth and the sky from the equator to the poles. Thus in ancient geography

and astrology climata ultimately came to have three separate meanings: first, it could mean any one of the seven astrological belts presided over by a planet that divided the earth from north to south; second, climata could be any of the twenty-four of thirty zones (or belts) of the inhabitable earth used to divide it from the equator up to, but not including, the poles; lastly, it might mean the division of the sky into quadrants based on the cardinal points of north, south, east, and west. By the end of the first century B.C., the Romans used climata to describe the weather of a given locale, which was assumed to depend upon the inclination or slope of the earth and the latitude.[1]

Thus by the first century B.C., the original Greek sense of klima had changed markedly. No longer was it strictly linked with the inclination or slope of the land, nor with the latitude of the earth, either astrologically or geographically; climata, rather, included aspects of all these various meanings. Roman use retained its original Greek association with slope or incline but included much that was originally absent in the Greek definition. By this time climata had astrological implications in terms of the influence of the planets that guided each of the seven zones. It also was used to divide the earth from the equator to the poles into thirty distinct zones based on computations of half-hour differences. And, finally, it could mean the weather in general so long as it was

affiliated with the occupied zone and the slope or incline of that area.[2]

Climate in Greek Medicine

Ancient Greek medicine was one of the sources of all future climate theories because of its concern with the relationship between the patient and the physical surroundings. A rudimentary outline of what would eventually constitute later climate theories is discernible in the extant books of the Hippocratic Corpus, especially the treatise Airs, Waters, Places. Although Airs, Waters, Places contains no systematic theory of "climate," it is possible to cull from it the first principles of what would eventually become -- in Renaissance and Enlightenment France -- general theories of climate. To state that the Hippocratic authors developed a general or particular theory of climate would be inaccurate; however, it is not an exaggeration to state that Hippocrates stressed, particularly in Airs, Waters, Places, the effects of physical surroundings on human health and well-being. More specifically, Hippocrates used ideas about various types of airs (or winds), waters, and locations that future theorists employed in various combinations to develop their climate theories.

Hippocrates propounded his theory of climate dogmatically. His theory forfeited systematic assimilation of broad physical surroundings in favor of an empirical

reductionism that highlighted the particulars of a given location in relation to the direction of inhabitants' exposure, the direction of the winds, and the types of soil and water prevalent. The intent was to recognize the relationship between these factors and the prevalence of disease.

The tone of this particular book, then, concerns itself with elucidating the reasons why people's physical surroundings favored certain diseases based on the types of airs, waters, and places identified by Hippocrates. And it was also used to identify the characteristics that differentiated whole groups of people. In the first half of the treatise Hippocrates enumerated the local external factors accounting for the physical and mental capacities of entire groups. But in the second half Hippocrates modified those ideas by stating that custom too played an essential role in shaping people's physical attributes and mental capacities.[3]

The first half of Airs, Waters, Places was probably a treatise designed to help the peripatetic physician familiarize himself with the external factors that helped explain the localized coincidence of certain diseases.[4] The first thing a physician had to understand, according to Hippocrates, was the significance of the local course of the seasons. He had to anticipate those changes by being able to forecast "the dates of the rising and setting of the stars" to recognize the unfolding of the seasons. This

knowledge was important because of the correlation, in Hippocrates' view, between the timing of seasonal changes and the diseases most likely to affect a particular town or district.[5] The Hippocratic physician also had to study the winds, whether warm or cold, the direction from which they originated, and the "situation" of the town, that is, the direction of its exposure, both for particular sites and "those which are common to every country." Winds too carried with them variations in the diseases that affected people.[6]

Neither could the physician be ignorant of the water supply of a given locale, the soil on which the inhabitants depended, and the manner in which a town's inhabitants lived. Moreover, there were three types of water that the physician had to know: soft, marshy water; water that "flows from high and rocky ground"; and salty water characterized by a permanent hardness.[7] In addition, the wandering physician had to be cognizant of the soil. Was it dry? Was it saturated with moisture? Did it produce a barren land or did it result in a land "thickly covered with vegetation"? Finally, the physician needed to know the type of life lived by the inhabitants. Did they eat and drink abundantly? Did they fatigue easily? Were they fond of physical exertion or work? Or did they maintain a proper balance of food and drink in relation to the physical elements of their surroundings?[8]

The physician had to be constantly aware of all of these physical elements and their constant changes because their combination accounted for disease. According to Hippocrates, winds dominated every town and district, but this dominance stemmed not from the direction of the winds but from the direction the town faced. Those towns and districts sheltered from the north winds but exposed to the prevailing southeast and southwest winds had large quantities of "brackish surface water" that were warm in the summer and cold in the winter and that caused inhabitants to suffer from moist, phlegmatic heads. Their internal organs experienced difficulties because the phlegm moved down from their heads, adversely affecting their "inner organs." Another problem encountered by these people was their tendency to have "flabby" physiques, as well as an inability to tolerate different types of food and drink.[9]

Towns and districts exposed to the opposite set of circumstances, that is, those protected from southerly winds but dominated by winds ranging from the northeast to the northwest had different health concerns. Their water "is cold and hard and usually brackish," and their inhabitants exhibited a leanness and sturdiness absent in those influenced by southerly winds. Instead of moist constitutions, they had dry ones -- tending towards constipation -- and they were influenced more by bile than by phlegm.[10]

Places exposed to easterly winds did not experience the debilitating effects that influenced those exposed to the north or the south. Healthful dispositions were more likely to reside in towns and districts protected from the warm and cold winds. The water in these areas was always "clean, sweet-smelling, soft and pleasant." Hippocrates attributed this good fortune to the rays of the early morning sun beating down and purifying the "dew from the morning mist." Inhabitants of towns and districts exposed to an easterly direction had more favorable prospects for good health and robust complexions as these areas avoided the perils of extreme heat and cold. Their people were likely to be endowed with a "better temperament and intelligence" than those exposed to northerly or southerly winds as springlike conditions dominated there year round.[11]

Areas subject to westerly winds languished under the most harmful conditions. The water consumed there, not benefitting from the early morning sun, was cloudy instead of sparkly and clear. Having the opposite set of external factors from those dominating their eastern counterparts, these regions were the recipients of autumnal weather year round. Towns and districts situated toward the west received only the most harmful effects of the sun; inhabitants received the full brunt of the sun's rays only after it reached its apogee and experienced the sun's hot blaze as it set in the afternoon.[12] Because of the town's unfortunate position, its inhabitants were susceptible to

every type of disease. The tremendous differences that distinguished the morning from the afternoon in towns and districts exposed to the west was most damaging for the inhabitants' health.[13]

Climate in Asia and Europe

The treatise, after deducing the effects of the different airs, waters, and places, then proceeded to an examination of the differences separating Asians and Europeans. According to Hippocrates, not only were Asians different from Europeans (Asians were "milder and less passionate"), so too were their physical surroundings, including plant life ("much bigger and finer in Asia") and the land ("tame and docile").[14] Asia's location to the east of Europe accounted, at least in part, for this situation: Asia and its people, inhabiting an area closer to the sun received its benefits to the fullest. Easterly winds prevailed with greater frequency the further east one moved thus helping to account for the excellent plant and animal life. Because Asia did not experience fluctuations of extreme warm and cold winds, the soil provided plentiful amounts of food with little or no human exertion. Hard and toilsome work, a requirement for procuring adequate food in Europe, was unnecessary in Asia.[15]

While Asia, like Europe, was characterized by differences in its physical surroundings, in general that which was centrally located between the extremes of hot and

cold had the greatest fecundity. The central area was blessed with the best of everything -- it was neither too hot nor too cold, neither too wet nor too dry. Accordingly, its inhabitants were of outstanding physique and differed little from one another "in size and physical development." Although such physical uniformity was good it was offset by their mental lethargy.[16] Because Asians were not affected by the extremes of warm and cold, they also differed from Europeans mentally. Asians were mentally weak and consumed by cowardice because the monotony of their springlike surroundings provided no mental stimulation, thus their lack of mental and physical aggressiveness. They were the passive receptors of a bland and repetitious set of external factors that induced them to mental and physical lethargy. The end result of this lack of extremes -- in terms of external stimuli -- led Hippocrates to posit that Asians were "not subject to those physical changes and the mental stimulation which sharpens tempers and induces recklessness and hot-headedness."[17] By contrast, Europeans were constantly affected by an ever changing set of external conditions that stimulated and invigorated the mind and warded off mental stagnation.[18]

At this juncture, however, just when Hippocrates verged on ascribing all differences between Asians and Europeans to the determining effects of their physical surroundings, he modified his analysis by asserting that the custom of

monarchical rule in Asia contributed to the differences between them and Europeans. This custom provided an additional ingredient that strengthened and reinforced the docility and feebleness of Asians. Unlike Europeans, Asians lived under a monarchy, and this reinforced the tendency toward cowardice already present because of the lack of variety in their physical surroundings. Even those born with an aggressive disposition (Hippocrates allowed for this possibility) eventually succumbed to mental and physical docility under a monarchy because this form of rule sapped aggressiveness, for "deeds of prowess and valour redound to the advantage ... of their masters, while their own reward is danger and death." Thus, it was the unending sameness of the physical surroundings, combined with the incapacitating effect of monarchical rule, that explained the differences that separated Europeans from Asians.[19]

After concluding his commentary on the typical geography of Asia, Hippocrates proceeded to discuss the few parts of Asia subject to violent and extreme changes in the physical surroundings. Inevitably, these places had the "most varied topography": lands characterized by forests, mountains, plains, and meadows. Where the land shifted radically so too did the oscillation between warm and cold, wet and dry. Places immune from such variation were always occupied by people who reflected their unchanging situation.[20]

Differences in physical appearance and mental capacity were, according to Hippocrates, assignable to the degree of change characteristic of a particular area. The greater the variable change in external factors, the greater the difference in the physical and mental dispositions of its inhabitants.[21] Attempting to explain why the Macrocephali had longheads, Hippocrates stated that at first it was caused by their custom of wrapping a newborns' head to promote its elongation. Such wrapping, however, was no longer practiced. What was at first produced by custom had thus been made a part of nature: "The chief cause of the length of their heads was at first to be found in their customs, but nowadays nature collaborates with tradition."[22] The shaping of infants' heads by wrapping was no longer needed as nature had taken over the custom initiated by the Macrocephali. Nature appropriated the customs of the Macrocephali and incorporated them in its own work, thus bringing about the temporary fusion of nature and custom. The reason for nature's assumption of Macrocephali custom, according to Hippocrates, resided in the fact that "the seed comes from all parts of the body," what was at first artificially produced became naturally a part of the Macrocephalis as a result of nature's incorporation of their tradition.[23] But the Macrocephalis' longheads gradually disappeared because of their intermingling with other people. What nature assimilated from custom reversed itself because of intercourse with different peoples. Thus, both

nature and custom were, for Hippocrates, malleable factors mutually influencing one other.

The Scythians, a nomadic group, were unique because of the cold areas they inhabited. They lived on a high grassy plain that received neither too much nor too little rainfall, which accounted in part for the fact that they differed little from one another. Certain of their physical features resulted from the physical configuration of their lands and the lack of significant change in their physical setting. The Scythians lived in the north, below the Rhipaean Mountains, and were affected by strong northerly winds that seldom gave way to winds from the south. Because of this factor, summer visited the Rhipaean Mountains rarely, at the most for a few days each year. The remainder of the year the Scythians were subject to winter-like conditions. No fluctuations between warm and cold existed there because of the elevation of the plains and the dominance of the northern winds. Because of the unending uniformity of their physical surroundings the Scythians, like the Asians, were prone to mental sluggishness and were noted for their physical similarity.[24]

Upon concluding his analysis of Asians Hippocrates discussed the Europeans and why they tended to differ more among themselves than did Asians. Europeans differed tremendously among themselves "both in size and appearance owing to the great and frequent ... changes to which they are subject." Warm summer and cold winter winds visited

areas of Europe regularly. In addition, much of Europe was subject to extremes of drought and rainfall, something absent in most of Asia. Because of the wide physical variations characteristic of Europe, Hippocrates believed that this led to a greater variety in the types of people living there. Europe's "nature is different in summer and winter, in rainy weather and times of drought," hence "the greater variation among individuals of the European races, even among the inhabitants of a single city, than is seen among Asiatics."[25] Areas subject to violent changes produced people with a fierce and warlike disposition, whereas areas noted for the lack of change were known for the dullness and docility of the mind and body.[26]

To attribute to Hippocrates a systematic doctrine of climate in the first half of Airs, Waters, Places based on a broad range of physical factors over a broad geographical region would be misleading. Hippocrates believed that two towns, one exposed eastwardly and the other to the north, and separated by a mere furlong, would be subject to and experience different health problems because of their contrary positions. The town facing to the east would benefit from springlike conditions year round, whereas the town exposed to the north would suffer the ill effects of winter.[27] Rather, what Hippocrates presented, in the first half of the work, was a idiosyncratic rendering of man's physical surrounding based on different types of airs, waters, and places. This work provided the physician with

a handbook that facilitated a quick reading of the dominant external factors, allowing him to treat his patients.

The second half of the book, however, sought to account for the different mental and physical constitutions of diverse peoples. Hippocrates appealed to the notion that the configuration of the land, the types of airs dominant in that land, the sameness or diversity of external factors, and the customs of the people all played important roles in their physical, but especially mental differences. This endeavor resulted in a disquisition that ascribed to diverse peoples fundamental characteristics that permitted Hippocrates to account for their perceived differences, both in their physical setting, mental faculties, and customs -- themes that would long endure and become increasingly sophisticated as future theorists sought to account for the various kinds of people to which they were exposed.

ENDNOTES

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3.Clarence J. Glacken, Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Centure (Los Angeles: University of California Press, 1967), 83; Ludwig Edelstein, "The Hippocratic Physician," in Ancient Medicine: Selected Papers of Ludwig Edelstein eds. Owsei & C. Lilian Temkin trans. C. Lilian Temkin (Baltimore, Maryland: The Johns Hopkins University Press, 1987), 87.

4.Ibid., 83. "When ... a physician comes to a district previously unknown to him." G. E. R. Lloyd, ed., Hippocratic Writings trans. J. Chadwick, W. N. Mann, I. M. Lorrie, E. T. Withington. (New York: Blackwell, 1950; reprint ed., New York: Penguin Books, 1987), 148.

5.Lloyd, Hippocratic Writings, 148-49.

6.Ibid.

7.Ibid., 148.

8.Ibid.

9.Ibid., 149.

10.Ibid., 150.

11.Ibid., 149-51.

12.Ibid., 151-52.

13.Ibid., 150-52.

14.Ibid., 159.

15.Ibid.

16.Ibid., 159-60.

17.Ibid., 160.

18.Ibid.

19.Ibid., 159-60.

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21.Ibid.

22.Ibid.

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24.Ibid., 162-63.

25.Ibid., 167.

26.Ibid.

27.Ibid., 151.

CHAPTER II

CLIMATE AND HISTORICAL THOUGHT IN SIXTEENTH-CENTURY FRANCE: JEAN BODIN

Although discussions about climate continued unabated from antiquity up to the Renaissance and were used in many different contexts and for many different purposes, they did not receive systematic application in France until they were assembled by Jean Bodin in the sixteenth century. Bodin gathered together many common ideas about climate and incorporated them into his major publications in his effort to understand the movement of history. His theory of climate served as a mediating point that brought together the three distinct yet connected types of history that he recognized: human, natural, and divine. The role of climate in natural history was where human free will met nature's unalterable qualities. The confrontation pitting nature's immutability against human volition resulted in the perpetual modification of both; nature erected boundaries that were difficult to cross, yet free will continually challenged and gradually altered the established boundaries of nature. Thus Bodin's focus on climate was fixed within

his overall view of nature, the role it played in natural history, and how it functioned in human history.

Biographical Sketch of Jean Bodin

Jean Bodin, destined to become one of the foremost political and historical theorists of sixteenth-century France, was probably born in Angers, either in June 1529 or 1530. The youngest son of Guillaume Bodin, a master-tailor, Jean was, like many individuals with his social background, committed early in life to train for the priesthood. At a young age Bodin gained acceptance into the Carmelite order in Angers; after his early training there he moved to the Carmelite monastery in Paris where he continued his studies.[1] While in Paris Bodin studied philosophy, attained fluency in Greek and Latin, and acquired some knowledge of Hebrew.

During the late 1540s Paris was the site of a confrontation between proponents of Scholasticism and humanist learning.[2] To receive an education in Paris at this time almost necessitated exposure to the attack on Aristotelian logic initiated by Peter Ramus; indeed some evidence suggests that Bodin utilized the Ramist method when formulating his most important works.[3] The intellectual conflicts that characterized Paris during the middle of the sixteenth century probably contributed to Bodin's growing disenchantment with abstract, Scholastic logic and redirected his attention toward more practical concerns,

like politics and history, that were beginning to interest French humanists.

For reasons that are not completely clear, Bodin left the Carmelites in the mid-1550s and returned to Angers. According to some accounts, there are three possible explanations for his departure -- he might have been excused because he professed at too early an age; or his superiors suspected that he lacked religious orthodoxy; or perhaps the stimulus of humanism persuaded him to foreswear the priesthood.[4] There is some evidence to support the contention that Bodin experienced a religious crisis during the 1550s. His later insistence on religious toleration and his belief that religion was a personal matter between the individual and God suggest that religious heterodoxy may have persuaded him to leave the Carmelites. It appears likely that in 1552-53 Bodin visited Geneva, the home of Calvinism. If so, he may have witnessed the burning of Michael Servetus in 1553.[5] Hence the possibility that Bodin's subsequent espousal of religious toleration reflected disillusionment with both Catholic and Protestant extremism.

After studying civil law in Toulouse from 1556 to 1559, Bodin reappeared in Paris where he began to practice as an avocat in 1562.[6] By then all members of the parlements and working advocates had to profess publicly the Catholic faith; Bodin's name, along with three hundred and sixty-seven other advocates, is recorded as among those pledging

adherence to Catholicism.[7] Shortly thereafter, in 1566, Bodin published his first major work, the Methodus ad facilem historarium cognitione; this work quickly won Bodin acclaim throughout Europe. Nevertheless, in spite of or because of his success, renewed suspicion arose over Bodin's religious orthodoxy at the time of a royal edict in 1568 that dismissed royal officeholders of the reformed faith, severely punished all Protestants, and required all members of the parlements and universities to reiterate their allegiance to Catholicism. Speculation concerning Bodin's religious heterodoxy culminated in his arrest on March 5, 1569; he was detained, stripped of his position as procureur-général of Poitiers (a position he had held since 1567), and imprisoned until August 23, 1570.[8]

After his release, Bodin became maître des requêtes et conseiller to Francis, Duke of Alençon, the king's brother. The Duke was the leader of the Politiques, a group that promoted religious toleration and freedom of conscience; in their opinion the crown need not concern itself with the establishment of true religion but, rather, needed to expend its energies on the maintenance of social and political order. The goals of the Politiques and the Duke's political ambitions were thwarted, however, by his ill-conceived attempt to wrest the throne from the rightful heir after Charles XI's death.[9]

Bodin's association with the Duke made him suspect to the newly established crown. Thus Bodin sought to

rehabilitate himself and ingratiate himself to the crown by publishing Les six livres de la république in 1576. Although the religious aims of the Politiques had been discredited by the Duke's failures, the République adopted a tone that accorded fully with their avowed intentions: peace instead of civil and religious conflict, social order rather than disorder, unity as opposed to factionalism.[10]

After Alençon's death in 1584 Bodin settled in Laon, where in 1587 he assumed the office of procureur du roi, a position he inherited on the death of his brother-in-law. Even though Bodin had withdrawn from national politics, doubts lingered on about his religious views, doubts that prompted members of the Catholic League to question his orthodoxy. In spite of the League's accusations the lieutenant-general of Laon cleared Bodin on the basis of testimony given by numerous witnesses that repudiated the League's allegations.[11]

Judicial confirmation of Bodin's Catholic orthodoxy did not end his problems, for the resurgent strength of the Catholic League in the 1580s prompted Henry III to order the assassination of the Duke and Cardinal of Guise in 1588. This act led to rebellion throughout France; the Parlement of Paris order all provincial officials to ignore royal orders and to resist the crown. Bodin, as an official of the crown in Laon, was placed in the uncomfortable position of either publicly declaring for the League or fleeing Laon, in all likelihood considerations of personal safety and

protection of his property led him to announce support for the League on March 21, 1589.[12]

For the next five years Bodin lived an uncertain existence. Caught between his desire for social, political, and religious harmony and his hostility to the Catholic League's religious extremism, Bodin eventually sided with Henry of Navarre in 1594. Henry's conversion to Catholicism convinced Bodin that he was the only person capable of bringing unity to France. Henry's moderate Catholicism now seemed to Bodin the only sure means of securing his goals of freedom of conscience and tolerant acceptance of religious diversity.[13]

The Writing of History in the Renaissance

Bodin's most important publications were his Methodus ad facilem historarium cognitione (1566), Response aux paradoxes de M. de Malestroit (1566), and Les six livres de la république (1576). The one major work that was not printed during his life, the Colloquium Heptaplomeres de Rerum Sublimium Arcanis Abditis, demonstrated his tolerant religious views at a time when such attitudes were uncommon.[14] As the Methodus, République, and Heptaplomeres demonstrate, Bodin was primarily interested in developing a method for the study of universal history; finding the best means for evaluating political laws and institutions and delineating exactly what type of relationship should exist

between the individual and religion. His was an educational program incorporating history, politics, and religion.

Bodin's interests conformed to the humanist belief that education, the accumulation and transmission of knowledge, was necessary to lead the good life.[15] Humanist pedagogy was grounded on the conviction that knowledge -- in Bodin's case, historical, political, and religious -- should induce people to act according to standards that would increase their prospects of attaining the good life. This attitude also implied that the acquisition and transmission of knowledge had practical benefits leading to the alteration or modification of social and political practices.

The shift in interest from abstract problems to the practical concerns of politics and history in sixteenth-century France owed much to the humanist movement of late fifteenth- and early sixteenth-century Italy, where recognition of a correlation between politics and history resulted not only in study of their relationship but in novel methods -- such as a return to the classics -- of examining their connections.[16] Abandoning the Schoolmen's search for abstract truths, humanists turned to the classical authors, whose ethical and political pronouncements were more pertinent to everyday life and politics.[17] One of the first French humanists to adopt this attitude was Guillaume Budé who believed that the study and eloquent rendering of the moral and political maxims of the classics would improve social and political conditions.

Budé's fervent belief in the efficacy of classical study and its relevance to current affairs remained one of the dominant motifs of sixteenth-century French humanism.[18]

In France humanist preoccupation with history increased in the latter half of the sixteenth century. History, especially the study of universal history, was thought to provide the best means of procuring a moral and political education; indeed it was required for a complete education.[19] Among those who supported the idea of a universal history included François Baudouin, Francesco Guicciardini, Francesco Patrizzi, and Philippe de Commines.[20] Universal history consisted of the study of the human past, of nature, and of the role of providence in human affairs. Human history was unique because thanks to the Fall and the role of human volition it lacked uniform and predictable laws of cause and effect.[21] The prudent historian had to study how nature, on the one hand, provided constants and, on the other, how it helped to fashion and influence human physical composition and mental dispositions.[22] The history of the divine was the culmination of universal history because it brought together human and natural history and raised the historian above earthly concerns to focus on the Creator. Bodin accepted the tenets of universal history and argued that its study was intended to clarify the role exerted by natural, human, and divine history and the extent of their relationship. According to him there were three types of historical

knowledge: knowledge of human affairs, the causes and effects of nature, and divine matters. An understanding of the divine was the ultimate goal of all historical inquiry (because it offered the humanist the opportunity to contemplate the Creator and to understand universal history better) but was obtainable only after illuminating human and natural history.[23]

The Tension Between Nature and Humans

Bodin derived his historical theory from a reading of Greek and Roman authorities among whom the most frequently cited were Plato, Caesar, Aristotle, Tacitus, Strabo, Livy, Plutarch, Posidonius, and Pliny. He also relied heavily on Hippocrates, Galen, and Ptolemy to support his theory of climate.[24] From these ancient sources Bodin created an elaborate and original synthesis that attempted to create the basis for a cataloguing of universal history.[25] Bodin's climate theory was developed to serve this end. Specifically his climate theory was intended to identify the effects of natural history on human historical development and, second, to show how a sovereign could recognize and wisely use nature's laws to rule.[26] The relationship between natural history and politics, Bodin argued, had been neglected; previous disregard of nature's uniformity and constancy had led to repeated miscalculation in the political realm because no one had recognized that attempts to formulate human laws according to absolute standards led

to the demise of great states.[27] Universal political standards were inappropriate precisely because people -- their laws, customs, and institutions -- differed and were subject to change. Those political rulers who mistakenly identified their promulgations with fixed natural laws did not realize that human variety existed in nature. One way to understand both the constancy of nature and the variety of humans better -- their different laws, customs, and institutions -- was to examine their climate, especially latitude, topography, and exact location.[28] Through God's creative act, nature's fixed and immutable order was assured, yet the types of people and climate differed widely.[29] Only after evaluating the influence of climate on the physical and mental disposition of people, and by extension, its effect on their laws and institutions, could the wise ruler "consider what efficacy lies in training to alter the nature of men."[30]

Though "nature" -- meaning climatic factors -- exerted a profound influence on human beings, it could be transformed, though only "by great force or long training."[31] Bodin did not teach that human beings were powerless before nature. Its influence was "incomplete" because the soul was "free from all materiality." However, proximity of the soul to the mind, and, in turn, of the mind to the spirit, the spirit to the blood, and the blood to the body led nature to impress upon the soul an indelible mark.[32] Human volition was conditioned by yet free from

complete subjection to nature because God had granted free exercise of the will.

Despite the human capacity to alter nature, nature's powers remained undiminished and with time "eventually they [nature's elements] return to their pristine character."[33] Education and training (both that which was "divine[ly]" inspired through God's direct intervention, and that which resulted from "human" activity) could free people from complete dependence on nature provided that they vigilantly safeguarded their "laws and customs"; otherwise "the people will soon return to their natural disposition."[34] The Germans had demonstrated the human ability to escape nature's confines; once they were barbaric and savage, wholly subject to nature, but through their leaders' constant efforts they had been "carried along the path of civilization."[35]

Bodin's Theory of Climate

Bodin adhered to the Ptolemaic conception of the seven heavenly spheres; first the moon, then Mercury, Venus, the Sun, Mars, Jupiter, Saturn, and the eighth sphere of the stars. In addition Bodin added two other spheres to account for the movement of the celestial bodies and the daily revolution of the first seven spheres. The ninth sphere explained the west to east movement of the celestial bodies and the daily revolution of the first seven spheres,

while the tenth accomplished the same task for the daily movement of the stars from east to west.[36]

Bodin's cosmology emphasized the influence of the heavens on the physical composition of all earthly things, though he rejected Galen's argument that human physical composition -- consisting of the four elements and governed by celestial bodies -- absolutely determined moral behavior. "Celestial bodies" did not "exercise ultimate control" over human affairs; there was no direct correlation between the individual and the cosmos.[37] In spite of this qualification, Bodin believed that the planets presided over the hot, cold, and temperate zones of the earth, regulating and directing human dispositions, mental tendencies, and actions. He assigned to each climate zone one of the outermost and innermost planets.[38] Southerners were guided by Saturn, Venus, and the sun; northerners by Mars, the moon, and the sun; the middle region by Jupiter, Mercury, and the sun. Saturn promoted understanding, Mars warlike behavior, Jupiter reason and just behavior. This allotment allowed Bodin to "understand more clearly the precise power of nature" because the assignment of planets to each zone clarified differences of human behavior.[39] Despite Bodin's allocation of the planets to the zones, he rejected the excessive determinism "of Ptolemy and the ancients" who believed that "the customs of peoples could be traced to the parts of the zodiac they apportioned to each."[40]

Bodin accepted the ancient doctrine of the four elements of the universe: earth, air, fire, and water.[41] All living things were composed of the four elements but only one dominated, depending upon the latitude, configuration of the land, exact location, and longitude. Latitude was the most important because of the influences of the sun and the other heavenly bodies. Neither the sun's light, nor that of the heavenly spheres, fell uniformly on the earth's surface. Thus the heat of the sun and the "virtues" of the heavenly bodies were unevenly distributed. Because the earth occupied a fixed location, the daily revolution of heavenly bodies, as well as their different positions in relation to the earth over an extended period, accounted for the infinite variety of living things.[42] The heavens thus contributed to the emergence of one dominant element in each latitude. Land configuration was next in importance because it determined whether one lived in valleys, the mountains, the plains, or in hilly areas.[43] Exact location within specific areas helped to explain the dominant element because it reflected influence from the north, south, east, or west.[44] Lastly, longitude -- the difference between east and west -- was negligible compared to the other factors contributing to the formation of the dominant element because neither really existed.[45]

Bodin's Climatic Zones and the Variety of Peoples

In explicating his climatic theory Bodin argued for the importance of examining "the nature of the people" residing in the north, south, east, and west before investigating "the characteristics of special places," such as "mountains, marshes, windy and placid regions." Interested in the general characteristics of groups rather than in individuals, he thought it more important to delineate the tendencies of people based on the four cardinal points because they reflected the more general tendencies of people in special places.[46] Bodin divided the earth from the equator northward into three thirty-degree zones. The first zone, occupied by southerners, he labelled "the burning Regions." The temperate zone followed, inhabited by people subject neither to extreme heat or cold. The cold zone extended from sixty-degree latitude to the poles, "regions that [were] exceedingly cold."[47] The mental and physical peculiarities of humans corresponded to these thirty-degree zones: a phlegmatic, watery constitution was dominant in the north and a dry, melancholic one in the south. In the temperate zone people fell into two groups: those in the northern half were sanguine and choleric, while in the southern half they were sanguine and melancholic.[48]

The distribution of people conformed to the latitudinal divisions of hot, temperate, and cold. Bodin offered as evidence the skin color of people living in the three zones:

> under the tropics they are unusually black; under the pole, for the opposite reason, they are tawny in color. After that, down to the sixtieth parallel, they become ruddy; thence to the forty-fifth parallel they are white; after that to the thirtieth they become yellow, and when the yellow bile is mixed with the black, they grow greenish until they become swarthy and deeply black under the tropics.[49]

The analogy Bodin drew between the three principal zones and skin color held also for internal composition. The further north one moved the more internal heat the body retained; heat coalesced, providing protection against external cold and explaining the great size and vitality of northerners compared to southerners. Exactly the opposite situation existed in the south, there the body naturally lost heat and became increasingly cold, making southerners smaller and less energetic.[50] Whereas all the people of the north and south were dominated by one principle (either heat or cold), people in the temperate regions "had an infinite variety blended from the extremes" and thus escaped the enervating aspects of both.[51] The excessive elements predominant in northerners and southerners cancelled each other out and the best possible balance emerged.

Bodin developed a similar analogy to explain the distribution of metals in the earth. In the north iron lay near the earth's surface, while in the south gold was "found in the fields and clean sands,"

> As the other metals are melted by the strength of the fire in the north ... so in the south gold is collected, not by the heat of the fire, but by the

> force of the celestial stars and the heat of the sun.[52]

The celestial forces that created in southerners a cold, dry interior, and in northerners a warm, moist one similarly affected the earth's composition. Thus in Bodin's climate theory the mineral composition of the earth and that of its inhabitants reflected one another.

In spite of Bodin's espousal of causal connections linking celestial bodies, the earth and its composition, and the character of its inhabitants, he refused to consider these relationships as deterministic, principally because Christian doctrine did not permit exact relationships of cause and effect that denied free will and God's ability to intervene directly in earthly affairs. Thus the connections he described merely allowed one to elucidate general tendencies -- not universal maxims -- because they "do not have fixed control."[53]

People in the southern region received from God the "force of genius" that permitted them to achieve excellence in "letters, useful arts, virtues, training, philosophy, religion, and lastly humanitatis itself."[54] Southerners naturally contemplated and meditated on the most sublime truths; the result was an intelligence that focused on religion, nature, and divine matters. Their eyes focused on the starry heavens, southerners were the propagators of wisdom that purified the mind. Hence it was they who had discovered and spread all the truly great religions and

"revealed the secrets of nature" as well as those of the "celestial bodies."[55]

Inhabitants of the northern zone were not privy to revealed truths but were compensated for their lack of philosophical insight with brute strength. All of their great successes were "accomplished ... by force of arms, like slaves and in the way of wild beasts."[56] Blessed with keen senses -- and thus animal-like -- northerners excelled in the manual arts and everything that required "skill and strength." They discovered, by means of their acute senses, "those objects called `mechanical' -- engines of war, the art of founding, printing, and whatever else belongs to the working of metals."[57]

Whereas people of the south discovered universal truths and northerners the manual arts, those in the temperate zone were best suited for managing human affairs; from that region there first emerged "institutions, laws, and customs," later "the best method of directing the state," and lastly "commerce, government, rhetoric, dialectic, and finally the training of a general."[58] All of the great empires -- "Asia, Greece, Assyria, Italy, Gaul, and Upper Germany" -- lay in the temperate zone thanks to a balanced disposition that permitted reason to create the best means for managing human affairs.

> The people therefore of the middle regions have more force than they of the South, & less policy: and more wit than they of the North, & less force; and are more fit to

> command and govern Commonweales, and more just in their actions.[59]

The ability of people in the temperate zone to exploit their superiority in arms over southerners and their intelligence over northerners explained historical development and more recent events. The French crown never defeated the Anglo-Saxons militarily just as the Anglo-Saxons were incapable of conquering the Scots. Never-theless, the French employed superior skill to mitigate their military losses when negotiating with the Anglo-Saxons; the same circumstances, with the same results, characterized relations between the Scots and the Anglo-Saxons.[60]

Bodin related the division of the three principal zones and the mental and physical types of their respective peoples" to the threefold universe":

> that is, the intellectual, consisting of the minds; the celestial, the stars; the elemental, where the origin and destruction of things occur. Here, in turn, belongs a threefold order of souls .... The first seems to turn purified intellects to God; the second to direct states; the last is occupied with matter and form.[61]

Thus the three groups reflected "the triple activities of the soul," which were "wisdom, prudence, and creative ability." And the triple activities of the soul dwelt in "contemplation, action, and production."[62] In turn, contemplation, action, and production matched the three stages of life: old age, maturity, and youth. The warmth and wetness of northerners denoted youth; the proper mixture of the four humors the maturity of people in the temperate

zone; while southerners resembled "old men" because they were cold and dry like the aged.[63] Ultimately all these factors -- the planets, latitude and longitude, the distribution of metals and elements, the disposition of the soul and the stages of life -- were intermixed in a complex pattern of analogies that explained variety in both mental and physical traits and in historical development.

Conclusion

As a part of natural history climate was important because it allowed the historian to understand more completely nature's role in shaping and conditioning human surroundings. More important, it was necessary to understand how climate operated because of its enormous effect on history. Climate was a part of both human and divine history: divine in that nature was the work of the Creator and human because it was the stage upon which the human drama unfolded. The intimate connections Bodin made between the three types of knowledge, and the similar links he drew between climate, human history, and the dependence of both on the Creator, indicates that his theory of climate was relevant to all three types of history. It was most relevant to human history because its study could uncover patterns of intellect, behavior, and physical composition that human beings could only slightly alter. Its relevance to natural history was also clear because it made more understandable both nature's uniformity and diversity.

Finally it was relevant to divine history because the comprehension of climate led one to marvel at the ingenuity of the Creator.

Bodin's importance as a theorist of climate and his influence was immense; he brought together many ideas commonly held by men of learning but applied them with originality, explaining why religions arose in the south, why the north was the source of the "mechanical arts," and why the middle region produced strong government. Further he was the principal Renaissance historian to formulate the problem of how climate influenced, and could in turn be influenced by, human beings. In showing how natural and human history engaged in a process of perpetual modification -- nature having boundaries that were difficult to cross yet free will continually challenging and gradually altering those boundaries -- Bodin struck a delicate balance between determinism and the human capacity to act on nature.

Bodin's work represented an ambitious enterprise that was to be taken up by later theorists and used to explain everything from the differences between the ancients and the moderns to the emergence and location of genius to the most ambitious effort of all, Montesquieu's attempt to understand the operation of political laws in light of the influence of climate.

ENDNOTES

1.Kenneth Douglass McRae ed., "Foreward," A3, in Jean Bodin, The Six Bookes of the Commonweale trans. Richard Knolles (Cambridge, Mass.: Harvard University Press, 1962).

2.Marian Leathers Daniels Kuntz, "Introduction," xvii, in Jean Bodin, Colloquium of the Seven About Secrets of the Sublime trans. Marian Leathers Daniels Kuntz (Princeton: Princeton University Press, 1975), xvii.

3.Kenneth Douglass McRae, "Ramist Tendencies in the Thought of Jean Bodin," Journal of the History of Ideas 16 (1955), 306-23.

4.McRae, "Foreword," A4; Kuntz, "Introduction," xvii.

5.Kuntz, "Introduction," xx.

6.McRae, "Foreword," A4.

7.Ibid., A7; Kuntz, "Introduction," xx.

8.McRae, "Foreword," A7; Kuntz, "Introduction," xx.

9.McRae, "Foreword," A8; Kuntz, "Introduction," xxii.

10.McRae, "Foreword," A9.

11.Kuntz, "Introduction," xxiv-v.

12.Ibid., xxv-vi; McRae, "Foreword," All.

13.Kuntz, "Introduction," xxvii.

14.Ibid., xv.

15.Hanna H. Gray, "Renaissance Humanism: The Pursuit of Eloquence," Journal of the History of Ideas 24 (1963), 500.

16.Felix Gilbert, Machiavelli and Guicciardini: Politics and History in Sixteenth-Century Florence (Princeton: Princeton University Press, 1965), 28-29.

17.Ibid., 89; William J. Bouwsma, "The Culture of Renaissance Humanism," (American Historical Association Pamphlets 401, 1973), 7.

18.Bouwsma, "The Culture of Renaissance Humanism," 39-40; For a discussion of humanist theories of eloquence consult Gray, "Renaissance Humanism," 497-515.

19.Julian H. Franklin, Jean Bodin and the Sixteenth-Century Revolution in the Methodology of Law and History (New York: Columbia University Press, 1963), 3.

20.Ibid., 116. According to Franklin, Baudouin's De institutione historiae universae et ejus cum jurisprudentia conjunctione prolegomenon argued "that the providence of God is exhibited not only in nature but in history."; John L. Brown, "The Methodus ad facilem Historiarum Cognitione of Jean Bodin: A Critical Study," (Ph.D. dissertation, The Catholic University of America, 1939), 62. Brown states that "the distinction of the Methodus, that there are three types of history: natural, human, and divine is repeated from ... Patrizzi and Baudouin." Patrizzi's formulation is found in his Della historia dieci dialoghi ... Venice 1560; For reference to Commines and Guicciardini consult Myron P. Gilmore, "Freedom and Determinism in Renaissance Historians," Studies in the Renaissance 3 (1956), 55-56.

21.Gilmore, "Freedom and Determinism," 57; Kuntz, "Introduction," xv-xvi.

22.Brown, "Jean Bodin: A Critical Study," 87-88.

23.Jean Bodin, Method for the Easy Comprehension of History trans. Beatrice Reynolds (New York: Columbia University Press, 1945, 15-16; J. W. Allen, A History of Political Thought in the Sixteenth Century (London: Methuen & Co. Ltd., 1928; reprint ed., Methuen & Co. Ltd., 1957), 397.

24.Brown, "Jean Bodin: A Critical Study," 90.

25.Allen, A History of Political Thought," 399.

26.Bodin, Commonweale, 547. "We must vary the estate of the Commonweale to the diversity of places; like unto a good Architect, which doth fit his building according to the stuff he finds upon the place: So should a wise Politician do who may not choose what people he will." All spellings have been modernized for ease of comprehension.

27.Ibid., 545; Marian J. Tooley, "Bodin and the Medieval Theory of Climates," Spedulum 28 (1953), 64.

28.Bodin, Commonweale, 547,

29.Kuntz, "Introduction," xxx; see also George Huppert, The Idea of Perfect History: Historical Erudition and

Historical Philosophy in Renaissance France (Chicago: University of Illinois Press, 1970), 93-94.

30.Bodin, Method, 85; Allen, A History of Political Thought, 406.

31. Bodin, Method, 85.

32.Ibid., 102.

33.Ibid., 85.

34.Ibid., 145-46; Bodin Commonweale, 566.

35.Bodin, Method, 145-46.

36.Tooley, "Bodin and the Mediaeval Theory of Climate," 66.

37.Ibid., 68. For a discussion of Bodin's acceptance of the Aristotelian theory of form and matter in the universe, consult Tooley, 66; Bodin, Method, 56.

38.Tooley, "Bodin and the Mediaeval Theory of Climate," 70. According to Tooley Bodin rejected the traditional assignment of the planets first established by Ptolemy. Ptolemy took the seven planets and assigned one each to the seven climata from the equator to the pole. Bodin was not the first, however, to eschew the Ptolemaic division; that had been done in the thirteenth century by Guido Bonatti in his De Astronomia Tractatus. See Tooley, "Bodin and the Mediaeval Theory of Climate," 70.

39.Bodin, Method, 111-12.

40.Ibid., 85.

41.Tooley, "Bodin and the Mediaeval Theory of Climate," 66-67. Tooley provides an excellent explanation of the medieval theory of the four elements and the different mixtures of elements inhering in all things animate or inanimate. "Simple," or inanimate things consisted of one of the four elements, whereas all animate beings consisted of a "misture" of the four elements. According to Tooley Bodin took the distribution of the elements from his view of Galen and thus believed that one of the four elements dominated in all living things.

42.Ibid., 67.

43.Bodin, Method, 138.

44.Ibid., 140.

45.Ibid.

46.Bodin, Method, 85; McRae, "Foreword," A22-23.

47.Bodin, Method, 85; Bodin, Commonweale, 547.

48.Bodin, Commonweale, 554.

49.Bodin, Method, 89.

50.Ibid., 92; Bodin, Commonweale, 547-49.

51.Bodin, Method, 91.

52.Ibid., 133-34.

53.Ibid., 85-86.

54.Ibid., 109-11.

55.Ibid., 111-13.

56.Ibid., 115.

57.Ibid., 111-12.

58.Ibid.

59.Bodin, Commonweale, 550-53. "We have the proof thereof in this realm [France], where the difference is apparent in regard of the English, who complained to Phillip of Comines with admiration, for that the French lost most commonly in their wars against the, and won still in their treaties."; Bodin, Method, 93.

60.Bodin, Commonweale, 550-53; Bodin, Method, 53.

61.Bodin, Method, 122.

62.Ibid.

63.Ibid., 125; Bodin, Commonweale, 559.

CHAPTER III

CLIMATE AND LAW IN MONTESQUIEU'S L'ESPRIT DES LOIS

> Ce qui fait la plupart des contradictions de l'homme, c'est que la raison physique et la raison morale ne sont presque jamais d'accord.
>
> Pensée

Charles Louis Joseph de Secondat, the future Baron de Montesquieu, was born in 1689, at a time when the faint murmurs of impending change slowly became audible in Europe. The precarious balance so painstakingly established in seventeenth-century Europe began to lurch: the reliance on traditional perceptions of the world -- the priority of God's laws, the divinely-ordered social hierarchy, the assurance of European supremacy -- began to crumble. The gradual undermining of these old verities was caused by diverse political and intellectual developments: the Glorious Revolution in England (1688-89); the epistemological revolution initiated by John Locke; the continued conflict between Catholicism and Protestantism; and, most importantly, for our purposes, the exploration of continents beyond Europe.[1]

At first the exploration of new lands had aroused only scattered comments. Initial reports of strange and exotic people elicited little response beyond recognition of their "novelty"; they were nothing more than an intoxicating diversion that did not profoundly alter European conceptions about the order of the world. Eventually, though, exploration stimulated and created the conditions necessary to challenge pretensions of Europe as a privileged sanctuary on earth. Contact with different societies engendered discussion and debate on the merits of European society itself. Those who themselves were chroniclers and explorers, as well as those who learned about distant lands from their accounts, began to reassess old beliefs, assumptions, attitudes, customs, and prejudices.[2] "Freethinkers" used the reports of chroniclers and discoverers to question the supposed European monopoly on truth, morality, and God's word. These freethinkers set out to demonstrate that Europe did not possess exclusive rights to truth; from their efforts issued a growing recognition that more than one standard existed by which to assess the value of European and other societies. The effort to explain the incongruities encountered in exploration provided Europeans with the opportunity to reexamine the sureties that informed European thought.[3]

Nevertheless, powerful ideas remained and gradually surfaced to check the attraction of these societies and to reinforce the idea of European preeminence.[4] One such idea

was climate. It was used to classify and judge other peoples and to demonstrate European superiority on "objective" grounds. Not only could it explain the differences within Europe but it could serve, in the hands of someone like Montesquieu, to explain the diversity of peoples, to classify and demonstrate how the temperate climate of Europe had facilitated European primacy. A longstanding belief in the power of climate was utilized by Montesquieu as a way of categorizing various people into divisions that privileged Europe and allowed for the labelling of remote peoples along lines familiar to Europeans.

Montesquieu's Intellectual Development

Montesquieu's published works began to appear shortly after the death of Louis XIV in 1715 when French intellectual life began to undergo rejuvenation. An interest in natural philosophy, art, literature, and history once again revived.[5] Concurrent with the renewed concern with these interests was an organizational reorientation of intellectual life -- both formally in science and informally with the creation of clubs and salons -- that would profoundly affect later developments in France. The establishment of new scientific institutions in the middle of the seventeenth century gained momentum with the formal reorganization of the Paris Academy of Sciences (1699) and the founding of provincial academies at the end of the

seventeenth and beginning of the eighteenth centuries.[6] Other organizational forms also emerged -- the salon and club -- that, while informal and lacking state support, nevertheless were of immense importance in providing a forum for the dissemination of new ideas.

Members of these new clubs and salons circulated an increasing number of clandestine manuscripts at gatherings where the origins and ambiguities of Roman and canon law, entrenched social customs, royal decrees, and the efforts of the parlements to limit Royal authority were discussed.[7] Two prominent examples of this activity were the club de l'Entresol and the salon of Madame de Lambert.[8] At the weekly gatherings of the club de l'Entresol, members read foreign newspapers, discussed manuscripts, and presented and criticized papers on politics and history.[9] While he may have read a paper to the club, Montesquieu was more visible in the small group that met at Madame de Lambert's, where history and politics also received considerable attention. Two frequent visitors to the salon were Bernard le Bovier de Fontenelle (perpetual secretary of the Paris Academy of Sciences) and Jean-Baptist Dubos (literary and art theorist).

Both Fontenelle and Dubos had considered climate and its effect on people.[10] In his Digression sur les anciens et les modernes (1688), Fontenelle discussed how climate influenced religion, health, and history; he believed that climate had originally dominated but had gradually

diminished in significance as social relations among people assumed greater importance.[11] The abbé Dubos used similar ideas for a different purpose. In his Réflexions critiques sur la poésie et sur la peinture (1719), he addressed the issue of what "genius" was and how it operated. Dubos defined genius as an attribute received at birth that was perfected only after the long study and imitation of nature. He identified climate as one factor that either hindered or facilitated the emergence of genius in art and poetry.[12] According to Dubos, climate affected the growth of genius more than it did physical attributes because of its importance in shaping the manners, moeurs, and actions of a society.[13] Hence climate could lead either to virtuous behavior (productive of genius) or to vice (vice productive of depravity).[14]

Perhaps Montesquieu's acquaintance with Fontenelle and Dubos made him aware of the argument that climate somehow influenced physical and mental development or both before he himself studied climate seriously. Nonetheless, there is little evidence to support the contention that he considered climate and its implications in any systematic way until he visited Italy in 1728-29.[15]

Aside from the writings of Fontenelle and Dubos, other sources known to Montesquieu commented directly or indirectly on climate. Travel literature and travellers returning from Italy mentioned the wretched air of Rome and its surrounding countryside; indeed, its ill-effects on

health were common knowledge.[16] Perhaps one of Montesquieu's most important sources was the little known theorist Espiard de La Borde. In 1743 La Borde had published in Brussels his Essais sur le génie et le caractère des nations; it reappeared in 1752 as L'esprit des nations and was translated into English the following year. In this work La Borde used climate in two ways, sometimes defining it traditionally -- distinguishing between the different climates based on half-hour differences of the longest day between parallels of latitude -- and in other instances using the word to mean air temperature or, more generally, the weather. Montesquieu probably had access to La Borde's work and quite possibly used it; one of the few surviving copies of Espiard's Essais is in the Bordeaux library frequented by Montesquieu. Thus arises the possibility that Montesquieu appropriated La Borde's neologism, climat, a word that until 1762 retained its official definition as a geographically determined parallel of latitude.[17]

Montesquieu also knew essays written by the English physician John Arbuthnot, who in 1731 published a medical treatise entitled An Essay Concerning the Effects of Air on Human Bodies (translated into French in 1742). In addition, Montesquieu's library at La Brede included a copy of Hippocrates' De Aere, two copies of Bodin's République, and one copy of Bodin's Methodus.[18] Other sources consisted of

Les récits de voyages, especially that of Le Chevalier Chardin.[19]

Thus a rich heritage of ideas about climate and its effects on the moeurs and social conventions of people circulated among the educated in France. Although Montesquieu's predecessors and contemporaries used theories of climate as he did -- to discern why there were so many varied societies -- significant contrasts set him apart from his peers. Their studies emphasized the relationship between social activity and the different climates, whereas Montesquieu emphasized climate's influence on societal morals.[20]

Montesquieu's tremendous success stemmed from a confluence of circumstances. The scope of his efforts, the eloquence of his work, and his social position vaulted him into the ranks of the most respected savants and solidified his standing within the emerging group of thinkers concerned with politics and history. He became the foremost political theorist of mid-eighteenth-century France and his work was invested with almost unparalleled authority.

Relations Between the Physical and the Moral

Montesquieu's first attempt to explore the relationship between the physical and the moral came in the mid-1730s with his Essai sur les causes qui peuvent affecter les esprits et les caractères.[21] Montesquieu first discussed material causes: air, wind direction, location, and

nourishment. Exposure to these elements in different combinations formed people's physical and mental traits. Montesquieu's most important work, L'esprit des lois (1748), incorporated elements of his earlier analysis but was more discriminating and less dogmatic. As the title indicates he was interested in the functioning of laws and how they operated in societies, providing them the means by which to perpetuate themselves.

Montesquieu defined "invariable laws" as "the necessary relations deriving from the nature of things," the binding relationship of cause and effect that governed phenomena as defined by natural philosophers.[22] He believed that these necessary relations existed not only in the physical world but also in the connection of the physical to the moral. Yet the link between them was not as strictly determined nor as enduring as were the physical laws of natural philosophy.[23]

Even though "man, as a physical being" was subject to physical laws, he possessed the ability, unique in nature, to make positive laws without necessarily having recourse to nature's laws. The product of "human reason," positive laws assumed different forms according to the circumstances of each nation. Accordingly, "the political and civil laws of each nation ought to be only the particular cases in which this human reason is applied."[24] But because physical and positive laws jointly governed in human beings the tension between them made it difficult to judge where the physical

ended and the moral commenced. Thus reason's operation differed for each nation and so too did their positive laws.

As people were limited in intelligence and possessed free will, they were "subject to ignorance and error." Because of this "man" continually encroached upon the laws of nature as well as "chang[ing] those that he establishes himself."[25] This explained why reason -- as manifested in positive laws -- depended upon attributes unique to the physical surroundings of people. Positive laws had to be evaluated

> relatives au physique du pays; au climat glacé, brûlant au tempéré; à la qualité du terrain, à sa situation, à sa grandeur; au genre de vie des peuples ... elles doivent se rapporter au degré de liberté que la constitution peut souffrir; à la religion des habitants, à leurs inclinations, à leurs richesses, à leurs commerce, à leurs moeurs, à leurs manières.[26]

Climate, soil, location, and land configuration were the physical factors that related most directly to the positive laws of each country. Their combination determined which kinds of positive laws existed and the extent to which they were dependent on or opposed to physical laws. They explained not only why countries were governed differently but also why there were several levels of political and social development. Some countries, unable to distance themselves from physical laws, were backward, while others, having earlier wrested themselves from physical dependence and relying almost exclusively on positive laws, were more advanced.[27] Although reason was universal, its applications

remained irregular. Thus, some countries were superior because they operated almost completely according to positive laws; countries where positive laws depended heavily on physical ones were less advanced; and countries where positive laws did not exist or were only tenuously established leaned heavily on physical ones.

The Definition of Climates and Their Formation

Although Montesquieu retained much of the traditional theory of three climatic zones as developed by Bodin, he offered a new definition of climate. Broadly defined, climate meant air temperature and, by extension, the effects it had on the body. Secondary elements of climate included soil, location, and extent of the land. Land configuration was a necessary element that contributed to climate's overall influence. The greater part of north Asia and Europe served as examples. Asia, according to Montesquieu, was divided by a chain of mountains that separated Siberia from Grand Tartary; north of the mountains the bitter cold air made cultivation of the land impossible.[28] The cold resulted from two causes: the elevation of the land and the pattern created when the mountains running from north to south were "levelled in such a way that the north wind blows everywhere without finding obstacles."[29] In contrast, Europe benefited from the shelter supplied by mountains extending from Norway to Lapland that formed "admirable bulwarks which cover the northern countries from this

[same?] wind." This barrier made it possible, as far north as Stockholm, to grow fruits and vegetables.[30] In Asia, however, the mountains and land elevation made countries that occupied the same latitude as southern France "as cold as Iceland."[31] Thus Montesquieu concluded that Asia "did not properly have a temperate zone." The lack of a temperate zone meant that cold and warm climates were contiguous which led to flaws in the social and political institutions of Asia. A common climate led to the adoption of similar kinds of social conventions and political institutions, such as despotism, slavery, and polygamy -- all of which were antagonistic to the growth of good government and strong moral convictions.[32]

The situation in Europe was quite different. Its temperate zone was "very extensive." Regardless of the differences of climate in Spain and Italy, Norway and Sweden

> comme le climat y devient insensiblement froid en allant du midi au nord, à peu près à proportion de la latitude de chaque pays, il y arrive que chaque pays est à peu près semblable à celui qui en est voisin; qu'il n'y a pas une différence; et que, comme je viens de le dire, la zone tempérée y est très étendue.[33]

There was an incremental shift of temperature northward that was virtually imperceptible; thus "strong nations are opposed to strong; those which touch have approximately the same courage." But the contrast of warm and cold climates in Asia led unavoidably to northern subjugation of the south, "therefore it is necessary that the one is conquered

and the other the conqueror."[34] In Europe an equilibrium had emerged that impeded the domination of any one country by another. Parity reigned. But in Asia the severe contrast of climate rendered warm countries prone to northern control.[35] Thus climate and geography facilitated the establishment of despotic empires in Asia and precluded them in Europe. It was apparent to Montesquieu that Europe's climate and geography nurtured a love of liberty while that in Asia fostered slavery and its political handmaiden, despotism.

The Climate and the Soil

The fertility or barrenness of the soil was also important in determining the extent of freedom or servitude. Productive lands "naturally establish[ed] dependence" because farmers were too concerned with cultivation to worry about or be "jealous of their liberty."[36] As unfavorable as barren soil or mountainous regions might initially appear, they stimulated liberty and independence among their residents who strive to "preserve what they have ... [because] they have little to preserve." In other words, these regions actually favored liberty because nothing else remained.[37] By zealously protecting their liberties these countries were governed republics (controlled either by all the citizens or only by the aristocrats) rather than despots.[38]

Inhabitants of desolate lands were diligent workers, oblivious to hard labor; they procured through constant effort what the land refused to tender. Their want provided the incentive lacking in lands blessed with abundance, where the fertile soil "gives, with ease weakness, and a certain love for the preservation of life."[39] The spirit of servility infecting fertile lands meant that "the spirit of liberty could not return" once the land's bounty accustomed people to laziness.[40] In addition, lands copiously blessed were subject to constant threats of invasion and plunder, another factor that contributed to the acceptance of servitude. Sterile soil, however, was not coveted and allowed farmers to spend the time necessary to make it productive.[41]

The Physical Effects of Climate

Montesquieu maintained the traditional postulate that climate affected the body's ability to respond to external stimulation and that this translated into definite mental attributes for given groups.[42] Following Arbuthnot, as well as his own experiments on the effects of air, he concluded that air temperature directly influenced the ability to receive and respond to outside stimuli by either expanding or contracting the "exterior fibers" and "nerve bundles" of the skin, thus increasing or decreasing the dispatch with which people responded to external sensation.[43]

Montesquieu undertook experiments on a sheep's tongue to determine how the body reacted to air temperature. After having the tongue frozen, he discovered that its appearance differed markedly from beforehand, when frozen "the mamilla [down-like hair] is considerably diminished," some of it had even "sunk into their sheath."[44] He believed that this test validated his thesis that "in the cold countries the nerve bundles are less expanded." Their contraction in cold climates made people less susceptible to "the action of exterior objects."[45] Combining conclusions drawn from this experiment with some personal observations of how people in Italy and England reacted to the same opera, Montesquieu stated that:

> J'ai vu les opéras d'Angleterre et d'Italie; ce sont le mêmes pièces et les mêmes acteurs: mais la même musique produit des effets si différents sur les deux nations, l'une est si clame [sic], et l'autre si transportée, que cela paraît inconcevable.[46]

The cold English climate contracted the external fibers of the skin and the nerve bundles, a physiological pattern that prevented the music from stimulating their "sensibility" as it did in Italy, where receptiveness to outside stimuli was greater.

While cold air "constrict[ed] the extremities of the external fibers," it increased their "elasticity" and forced more blood toward the heart.[47] Thus people in cold climates were less aware, less cognizant of their surroundings because contraction of their fibers led to diminished

sensations.[48] So barren were northerners of sensation that in Russia "it [was] necessary to flay a Muscovite in order to give him sentiment."[49] Although decreasing people's physical responses, cold climates translated into positive mental attributes. As cold air augmented physical strength, people had "more confidence in themselves," were more candid and courageous, less likely to seek revenge, and devoid of suspicion.[50] Individuality and freedom were fostered; servitude discouraged.[51]

Warm air occasioned the opposite physical and mental circumstances. "Hot air" relaxed the skin and lessened blood flow so that "the end of the nerves ... [are] expanded and exposed to the smallest action" of external agents.[52] Montesquieu concluded that people in warm climates responded to the slightest promptings, which rendered them incapable of aggressive behavior. He argued, for example, that if a man was enclosed in a warm area for an extended period he would be reluctant to consider any bold action: "he will fear everything because he will feel that he can do nothing."[53] The heat of India provided a perfect example because it illustrated how a warm climate "enervated and overwhelmed" the body -- it made rest seem natural -- for there "movement [was] ... arduous."

India's torrid climate spawned a "système de métaphysique" founded solely on the ill-effects of heat. This metaphysical system materialized because of the "laziness of the climate," which had caused the Buddha to

"put man in an extremely passive state."[54] In India the populace was accustomed to "the worst effects of the climate," which hindered the creation of beneficial positive laws. The idle resignation typical of Indians resulted from poor positive laws caused in turn by the poor climate.[55] Indians' acquiescence to the climate was but an example of how a warm climate could lead people to accept a pattern of thought and action wholly dependent upon physical causes. The warmth of India's climate demonstrated not only that Indians had progressed less than other Asians but also that it hampered attempts to alter Indian moeurs and social institutions.

Climate and Morality

People in northern climates were morally superior to people in other climates. In cold climates gratification was found in physical activities such as hunting, drinking, fighting, and traveling. These physical endeavors spawned in northerners a disdain for vice, a love of virtue, candid and sincere thoughts -- all attributes that epitomized moral and upright behavior.[56] The natural moral goodness encouraged by cold climates vitiated the need for laws designed to restrain behavior, particularly for women. In the Christian world, especially that of northern Europe, women were moral exemplars

> leurs moeurs sont naturellement bonnes; où toutes leurs passions sont calmes, peu active, peu raffinées; où l'amour a sur le coeur un empire si réglé, que la moindre

police suffice pour les conduire.[57]

The moral behavior of European women benefited everyone. The public display of their charms never aroused jealousy or a lapse of morals because they "reserv[ed] themselves for the pleasures of one."[58] An agreeable climate like Europe's had no need of an astute legislator to forbid behavior never contemplated.

The moral uprightness characteristic of northerners gradually faded as one moved to the south. In warm climates, Montesquieu argued, "the soul is intensely moved by everything that relates to the union of the two sexes" because "it [love] ... [was] the sole cause of happiness; it ... [was] life itself."[59] There warmth stimulated the soul's response to everything but received physical satisfaction only in physical pleasure. There you would find that "the strongest passions will multiply ... crimes" because everyone sought personal satisfaction by whatever means possible.[60] Without the benefit of legislative proscription, inhabitants of warm climates were incapable of resisting their desires: "there are climates where the power of nature has such force that the moral has almost none." In such instances the separation of men and women was necessary; otherwise carnal desires would be constantly inflamed as a result of the prolonged mutual exposure of the sexes.[61] Admiring the practice of confining women in separate quarters in Turkey, Persia, China, the Mogul

Empire, and Japan, Montesquieu stated that "the morals of the women are admirable" because of that custom.[62]

In those places where "the physical power of ... [the] climate violate[d] the natural law of the two sexes and those of intelligent beings," a good legislator needed to make laws that would render climate's influence insignificant. Otherwise loathesome behavior would flourish.[63] India was a case in point. It was "there that one sees to what an extent the vices of climate, allowed great freedom, will carry licentiousness." The dominance of climate in India necessitated the physical separation of women, a law that was not forthcoming.[64] Thus jealousy among Indian women led to horrific crimes as they were allotted their freedom when the climate dictated otherwise.[65]

Inhabitants of temperate climates had neither the strict morality of northerners nor the intense passions of southerners. Thus they were inconsistent in their actions. Except for women in Europe, people in temperate climates did not exhibit "a quality determined enough to fix them [that is, manners, vices, and virtues] themselves" because the climate itself oscillated between extremes of hot and cold.[66] This was a significant departure from earlier assertions of the virtues of temperate climates. Nevertheless, Montesquieu limited his thesis of the moral indeterminacy of temperate climates to regions beyond

Europe, for only in Europe had social conventions overcome the ambiguities characteristic of other temperate zones.

The Need for Legislation in Poor Climates

Infirmities caused by climate were overcome only when legislators refused to submit to its dictates and promulgated laws designed to mitigate its effects.[67] Poor legislators let climate govern. In China "physical causes" inclined people to indolence but "the moral causes" of beneficent rule had hindered climate's domination: from the very beginning "the ... legislators of China were obliged to make very good laws" notwithstanding the poor climate. Chinese rulers recognized climate's effects and drafted laws in full consideration of it: "they made their religion, their philosophy and all their laws practical" in recognition of the need to shield their subjects from the climate.[68] According to Montesquieu the Emperor's yearly practice of "opening the ground" (feng and shan sacrifices) was an example of how implementing good laws could forestall climatic dominance because his actions established a pattern of behavior for his subjects to imitate.

The well-articulated laws of China demonstrated that neither their customs nor form of government had changed in a thousand years. Such endurance was a testimonial to the virtues of positive laws.[69] The Chinese had not changed partly because of good laws and partly because they could not improve on the balance struck between a poor climate and

the laws implemented to lessen its influence. They were suspended, unable to move either forward or backward. In respect to China Montesquieu concluded that, despite the resistance of the Chinese to change and progress, their history proved that climate need not remain dominant.

Climate and Slavery

Although "slavery ... [was] against nature" it still appeared to be "founded on natural reason" in some countries, especially those of Asia, where the warm climate inclined people toward inactivity.[70] In Asian countries extreme heat rendered the body and mind "absolutely without strength." To overcome it a stimulus was needed. This stimulus was slavery, which forced people to do work that otherwise would be left undone. In China, India, and Turkey slavery conformed to physical laws because exercising the mind was much more exacting than arduous physical labor: for "the most part punishments will be less difficult to maintain than the functioning of the mind which is necessary for it to conduct itself."[71] People promptly submitted to slavery because it was less onerous than the mental exertion required to maintain one's autonomy. Even though explicable by an appeal to "natural reason," the use of slaves was especially pernicious for the state, master, and slave.[72] Though understandable and marginally beneficial, slavery was never useful. Thus Montesquieu praised European countries, where the climate rendered slavery unreasonable or where

astute lawgivers prohibited either its implementation or continuance.

Female slavery in Muslim countries was an example of slavery's existence as natural reason. There women's physical development preceded the attainment of reason because the warm climate accelerated physical maturation. For women youthful marriages meant a lifetime of "dependence" because by the time reason flowered, youth and beauty had wilted.[73] Compared to warm climates, temperate climates "naturally introduce[d] a type of equality between the two sexes" as physical and moral reason were realized together. Montesquieu used this argument on disparity between physical and moral development to explain why, in temperate climates, slavery too was absent.

Climate and Religious Divisions

Climate explained the geographical distribution of Islam and Christianity as no religion could be propagated beyond its "natural boundaries."[74] Even though Christianity was the only true religion, the climates of non-Christian countries prevented its spread. This explained why Islam was accepted in Asia and encountered insurmountable problems in Europe. The physical causes that led to Islam's success in Muslim countries were similar to the causes of Asiatic despotism. The enervation of the mind and the body in warm climates worked for a despotic religion like Islam and against religious institutions promoting liberty.[75]

The rupture in the Christian faith that occurred in the sixteenth century also originated from the different climates of northern and southern Europe. Although there was no extreme separation of the climates in Europe, there were distinct differences between north and south. Northern countries embraced Protestantism because they "have and will always have a spirit of independence and of liberty that the people of the south do not have." In the north the "independence of the climate" predisposed its inhabitants to repudiate Catholicism and to proclaim their religious autonomy. In the south, however, where people needed religious guidance and authority, Catholicism retained its authority.[76]

Climate in Asian and European History

According to Montesquieu, the histories of Asia and Europe supported his assessment of their climates. Asian history demonstrated that the north always conquered the south. In Europe, however, from the beginning of recorded history to the present only "four great changes" had occurred: the conquests of the Roman Empire; its collapse at the hands of northern barbarians; the conquests of Charlemagne; and those of the Normans. Even though it had been the scene of repeated triumphs, the history of Europe differed from Asia's because following every conquest "a general strength [was] diffused through all the parts of Europe." This dispersion of power ensued from the

conformity of Europe's climate. Empires or would-be empires, for example the Romans, had experienced problems when attempting to dominate all of Europe but had conquered Asia easily.[77] The ease with which European nations prevailed over the rest of the world was to be explained by the physical and mental benefits accruing from the temperate climate. Thus the problem of maintaining an empire dissipated when European countries turned askance from attempts to dominate Europe and focused on expanding their influence to other continents.[78]

Conclusion

Montesquieu's revival of climate theory occurred at a time when Europeans were becoming more knowledgeable about the many different kinds of societies in the world. Although Europe had known of distant peoples for centuries -- and had become even more familiar with them since the voyages of exploration -- the increased number of reports about these strange peoples and their "unorthodox" customs began to receive systematic consideration at a time when Europe itself was experiencing doubt. European recognition of these bizarre peoples had been postponed, but once systematic examination began the disquietude it stimulated was alleviated by an appeal to familiar ideas like climate.

By invoking a long-held belief in climate, and using it to delineate how physical and moral aspects of life reciprocally influenced one another, Montesquieu redirected

the focus on climate and provided Europeans with a means for judging the quality of the moeurs and social institutions of exotic peoples that reinforced their own conviction of inherent superiority. Montesquieu clung to many of the hallowed precepts of climate, such as why northerners were lovers of liberty and southerners condemned to servitude, but he did so in a way that confirmed why Europe was animated by freedom, dependent almost exclusively on positive laws, while other countries, notably those of Asia and the Orient, in many ways passively reflected their physical surroundings.

His investigation of climate left no doubt that he considered wholesale attachment to climate undesirable because it impeded the development of positive laws. Montesquieu never asserted that climate alone governed, only that

> plusieurs choses gouvernent les hommes: le climat, la religion, les lois, les maximes du gouvernement, les examples des choses passées, les moeurs, les manières.[79]

When one of these influences "act[ed] with more force, the others in the same degree are weakened." Climate most influenced "savages; manners govern the Chinese; the laws tyrannize the Japanese; morals once had complete influence at Sparta; maxims of government and the ancient simplicity of manners once prevailed in Rome."[80] As climate was "the first of all the empires," it followed that it most affected societies that had yet to develop distinctive social

conventions and moeurs.[81] Once movement away from climate commenced, positive laws, manières, moeurs, and tradition played an increasingly significant role.[82]

The control exerted by climate hampered the development of positive laws that were characteristic of advanced societies. Nations that had developed positive laws and that were not controlled by the crude vestiges of physical laws were superior because they had moved beyond the dominance of climate. By appealing to the ancient idea of climate "objectively" Montesquieu helped to ease many of the doubts that were then questioning the very foundations of European society. Not only did Montesquieu provide an account of the many different kind of laws operating in different societies but he did so in a way that alleviated doubts about European society itself.

ENDNOTES

1.Paul Hazard, The European Mind: The Critical Years, 1680-1715 (New Haven: Yale University Press, 1953).

2.Ibid., 3-12.

3.Ibid., 23-28. For a provocative but ultimately unconvincing thesis concerning radicals and republicans in the early eighteenth century see Margaret C. Jacob, The Radical Enlightenment: Pantheists, Freemasons, and Republicans Early Modern Europe Series Today ed. J. H. Shennan (Boston: George Allen & Unwin, 1981).

4.For a discussion of the Spanish contact with the "Other" consult Tzvetan Todorov, The Conquest of America: The Question of the Other, trans. Richard Howard (New York: Harper & Row Publishers, 1984; and for an equally provocative account of European "hegemonic" discourse encompassing the Orient, see Edward W. Said, Orientalism (New York: Pantheon Books, 1978).

5.Mannerl O. Keohane, Philosophy and the State in France: The Renaissance to the Enlightenment (Princeton: Princeton University Press, 1980), 361-62.

6.An old but still useful study on private scientific organization in the seventeenth-century France is Harcourt Brown, Scientific Organizations in Seventeenth Century France, 1620-1680 (New York: Russell & Russell, 1967; reprint ed. 1934); for an excellent analysis of the drive to establish scientific organizations throughout Europe in the seventeenth and eighteenth centuries refer to James E. McClellan III, Science Reorganized: Scientific Societies in the Eighteenth Century (New York: Columbia University Press, 1985); for the Paris Academy of Sciences and the argument that it underwent unofficial reorganization well before official reforms were implemented in 1699 consult Roger Hahn, The Anatomy of A Scientific Institution: The Paris Academy of Sciences, 1966-1803 (Los Angeles: University of California Press, 1971), ch. 3; an excellent refutation of Hahn's thesis that the Academy became an anachronism unable to accommodate itself to social changes in the eighteenth century is found in Charles C. Gillispie, Science and Polity in France at the End of the Old Regime (Princeton: Princeton University Press, 1980), ii & 187; and for the organization of science in the Napoleonic era

see Maurice Crosland, The Society of Arcueil: A View of Science at the Time of Napoleon I (London: Heinemann, 1967).

7.Nannerl O. Keohane, Philosophy and the State in France: The Renaissance to the Enlightenment (Princeton: Princeton University Press, 1980), 361-62; Clarence J. Glacken, Traces on the Rhodian Shore: Nature and Culture in Western Thought from Antiquity to the End of the Eighteenth Century (Los Angeles: University of California Press, 1967), 568; Ira O. Wade, The Structure and Form of the French Enlightenment Volume I: "Esprit Philosophique" (Princeton University Press, 1977), 144.

8.Keohane, Philosophy and the State in France, 361-62.

9.Wade, The Structure and Form of the French Enlightenment I, 316; see also Robert Shackleton, Montesquieu: A Critical Biography (Cambridge: Oxford University Press, 1961), 63-67 for the possibility that Montesquieu participated at least once in the meetings of the club de l'Entresol.

10.Shackleton, Montesquieu, 63-67.

11.Glacken, Traces on the Rhodian Shore, 552.

12.Wade, The Form and Structure of the French Enlightenment I, 108-09.

13.Ibid.

14.Shackleton, Montesquieu, 303.

15.Ibid., 303.

16.See Shackleton, Montesquieu, 90-116 for the importance of his Italian trip and how it acted as a catalyst for the subsequent development of Montesquieu's thought about climate.

17.Ibid., 308-09. Shackleton argues that Montesquieu used La Borde's work when formulating his climate theory. Specifically he states that in traditional definitions of climate "the connotation of atmospheric condition or weather is absent, as it is absent from dictionaries until the 1762 revision of the dictionary of the Academy. Montesquieu is the first writer of any significance to use the word climat in the sense of weather; but Espiard precedes him. Having in his second chapter produced the specialized and traditional definition of a climate, he goes on thereafter to use the word climat in its modern meteorological sense ... more likely is the hypothesis that Montesquieu was the borrower: the very rare first edition of Espieard [1743] ... is present in the municipal library of Bordeaux."

18.Ibid., 306-09.

19.For the influence of Arbuthnot on Montesquieu consult Joseph Dedieu, Montesquieu et la tradition politique anglaise en France: les sources anglaises de L'esprit des lois (Paris: J. Gabalda & Cie, 1909), 213-25. Dedieu argues that many of the passages in Arbuthnot's work are similar to those in book XIV of L'Esprit des lois where the effects of hot and cold air on the body are discussed; for the argument that Chardin's Voyages de Monsieur Le Chevalier Chardin en Perse et autres lieux de l'Orient played a prominent role in Montesquieu's climate theory, consult Muriel Dodd, Les récits de voyages: source de l'Esprit des lois de Montesquieu (Paris: Librarie Ancien Honoré Champion, 1929), 55-56.

20.Glacken, Traces on the Rhodian Shore, 565-66.

21. William Stark, Montesquieu: Pioneer of the Sociology of Knowledge (Toronto: Toronto University Press, 1961), 107.

22.Montesquieu, L'esprit des lois, in Oeuvres Complétes, Preface Georges Vedel (New York: MacMillan Co., 1964), Volume I: Book I, 530. All translations have been checked against The Spirit of the Laws, trans. Thomas Nugent. Introduction by Franz Neumann. (New York: Hafner Press, 1949).

23.Montesquieu, Esprit, 530.

24.Ibid., 532.

25.Ibid., 530.

26.Ibid.

27.Glacken, Traces on the Rhodian Shore, 571.

28.Montesquieu, Esprit, 631.

29.Ibid., 630-31.

30.Ibid.

31.Ibid.

32.Ibid.

33.Ibid.

34.Ibid.

35.Ibid.

36.Ibid., 632.

37.Ibid., 634.

38.Ibid.

39.Ibid.

40.Ibid.

41.Glacken, Traces on the Rhodian Shore, 576.

42.Ibid., 568; Shackleton, Montesquieu, 309.

43.Montesquieu, Esprit, 613.

44.Ibid., 614.

45.Ibid.

46.Ibid.

47.Ibid.

48.Shackleton, Montesquieu, 310.

49.Montesquieu, Esprit, 614.

50.Ibid., 613; Glacken, Traces on the Rhodian Shore, 569; shackleton, Montesquieu, 312.

51.Shackleton, Montesquieu, 312.

52.Montesquieu, Esprit, 613-14.

53.Ibid., 613.

54.Ibid., 615.

55.Ibid., 615.

56.Ibid., 614.

57.Ibid., 628.

58.Ibid.

59.Ibid., 614 & 627.

60.Ibid., 614.

61.Ibid., 626-27.

62.Ibid.

63.Ibid., 618.

64.Ibid., 627.

65.Ibid.

66.Ibid.

67.Shackleton, Montesquieu, 312.

68.Montesquieu, Esprint, 615 & 634.

69.Ibid., XIV, 615.

70.Ibid., XV, 620. "Mais, comme tous les hommes naissent égaux, il faut dire que 'esclavage est contre la nature, quoique dans certains pays il soit fondé sur une raison naturelle."

71.Ibid., 614.

72.Ibid., 621.

73.Ibid., 625.

74.Glacken, Traces on the Rhodian Shore, 572 & 580.

75.L'esprit, 698.

76.Ibid., 699; see also Glacken, Traces on the Rhodian Shore, 580.

77.Montesquieu, Esprit, 631.

78.Ibid.

79.Ibid., 641-42.

80.Ibid.

81.Ibid., 644.

82.Shackeleton, Montesquieu, 318.

CHAPTER IV

CLIMATE AND HUMAN VARIETIES IN BUFFON'S HISTOIRE NATURELLE

Raised on much the same intellectual fare that nurtured the mature Montesquieu, George-Louis LeClerc, later the comte de Buffon, was born into a family of civil servants in Montbard in 1707.[1] Even though born a generation after Montesquieu, the same basic intellectual environment influenced Buffon: Cartesian rationality, Baconian-Newtonian empiricism, and the sensationalist psychology of John Locke.[2] Although Cartesian physics had been partially discredited by Newton and his allies, it still remained influential well into the first half of the eighteenth century. More important still was the increased respect granted to Newton and the empiricist methods championed by the English. Lastly, Lockean sensationalism, receiving its most radical French exposition in the work of the abbé de Condillac, forcefully argued that sense impression and their recombination in the mind were the only possible source for ideas.[3] In eighteenth-century France these intellectual currents were variously combined to produce powerful justifications for the exploration of and theorizing on the relationships that existed in nature.

The new scientific way of viewing the world that emerged in the late seventeenth and early eighteenth centuries encouraged the frenetic scrutiny of, and increased production of knowledge about Europe and lands beyond. Reports about strange lands inhabited by peoples noticeably different were at first a diversion for the idly curious but in the course of the eighteenth century sparked the European imagination and heightened awareness among Europeans of their own distinctiveness as a civilization. Exposure to such reports stimulated a desire to understand that which was different, investigate why such differences existed, and compare those foreign peoples to those of Europe. Not only did the acquisition of knowledge prompt questioning of many established assumptions guiding the thoughts, beliefs, and attitudes of Europeans, but it also led them to reaffirm the standards by which they lived and to belittle those of newly or recently discovered peoples.[4]

Natural history grew prodigiously in the eighteenth century and France became one of the most important centers for naturalist studies. The Jardin du roi was the place where animal and plant collections gathered on voyages of exploration were sent to in France. Buffon was appointed superintendent of the Jardin in 1739 and under his direction it quickly became the foremost repository of natural history collections in Europe. Soon after his selection as intendent, Buffon started to write what would become one of the most important works of eighteenth-century natural

history, the Histoire Naturelle. The first three volumes of the Histoire Naturelle were published in 1749 and they appeared regularly thereafter up to and through Buffon's death in 1788.[5] Buffon did not limit himself to the study of the plants and animals collected at the Jardin -- he also brought within his purview reports of exotic peoples that had cropped up with increasing frequency since the beginning of the eighteenth century. His effort to account for both the diversity and unity of nature and "man's" place in it led him to consider climate as one of the keys to unlocking the mystery of these different peoples. Buffon viewed climate as one of the principal determinants of physical appearance, nutrition, and, to some extent, moeurs. By positing a relationship between climate and different peoples, Buffon subscribed to many prevalent notions then circulating about climate, its operation and effects. But he did so in a way that modified traditional ideas about climate and allowed him to formulate a more sophisticated account than had Montesquieu.[6] Prime among these was his notion of "degeneration" and migration of the human "species."[7]

Buffon and the Definition of Natural History

Buffon's competing yet sometimes complementary allegiances to Cartesianism, English empiricism, and sensationalism converged unevenly in his monumental work the Histoire Naturelle, Générale et Particulière, avec une

description du cabinet du roi (1749-88). Buffon's mixed intellectual parentage and his all-embracing effort to comprehend nature combined in him to occasion a unique scientific and literary work, the aim of which was to achieve an understanding of how nature, conceived in its broadest possible meaning, operated. It is only within this context of broad generalization that it is possible to comprehend Buffon's sensitivity to nature's tangled web, his rejection of classification systems founded on a few specific characteristics, and his suspicion of those who relied on mathematics to explain nature:

> the disadvantage here [of classificatory systems] is the tendency to overextend or to unduly constrict the chain of connections, to wish to subject the laws of nature to arbitrary laws, to wish to divide this chain where it is not divisible .... Another drawback ... is the temptation to restrict oneself to a regime of overly-detailed methods, and thus to wish to judge the whole by a single instance, to reduce nature to the status of petty systems ... to fashion arbitrarily just as many unconnected assemblages of date.[8]

Located in this statement is Buffon's justification for refusing to follow strictly either Newton's mathematical principles or Linnaeus's systematic classification of species and genus according to reproductive organs.

Although Buffon himself greatly admired and sought to emulate Newton, he never hoped to achieve the same precision that Newton had in his physics. While acknowledging the enormous contributions made by the physical and mathematical sciences, Buffon considered their

methods inappropriate for the naturalist because they were human inventions -- issuing from the human mind -- that inhibited attempts to grasp nature's varied dimensions. He argued that an irreducible chasm separated the theoretical formulations of the hard sciences and the empirical reality of nature. Nature was not geometric.[9] Attempts to apply geometric formuli to the complex operations of nature had added little real understanding to the processes by which nature worked. They revealed more about how the human mind worked than about nature operations -- nature was much too varied.[10]

Seeking to explain the seemingly inexhaustible variety of nature's powers, eighteenth-century naturalists rekindled the idea of a great chain of being. Convinced that imperceptible gradations linked together all things in an indivisible chain, Buffon settled on the chain of being as the only possible explanation for nature's profusion.[11] Because of his faith in the chain of being and in view of the breach he saw between theoretical pronouncements and nature's intricacies, Buffon opted for what he considered to be the only reliable method of study, descriptive analysis:

> The first causes of things will remain ever hidden from us, and the general results of these causes will remain as difficult for us to know as the causes themselves. All that is given to us is to perceive certain particular effects, to compare these with each other, to combine them, and, finally, to recognize therein more of an order appropriate to our own nature than one pertaining to the existence of the things which we are

considering.[12]

Not only did Buffon reveal himself as a good Newtonian -- foreswearing the search for final causes -- he also shunned mathematics because of its inherent limitations. Nothing but a descriptive science based on comparisons within nature itself could serve as a valid alternative; otherwise a naturalist's speculations would be sterile and abstract.[13] According to Buffon, description must be founded on relationships subsisting in nature itself not categories devised to suit the classifier's needs. Although comparison lacked the theoretical rigor of the hard sciences, it offered compensation by contrasting and differentiating nature's elements with each other and with, most importantly, Buffon's ultimate point of reference, man. By drawing distinctions based on resemblances and differences, carefully discriminating between them, and then making broad generalizations, Buffon maintained that one could study nature systematically and at the same time remain sympathetic to its complex activities.[14] This approach is fully evident in Buffon's exploration of the relationship between climate and the human species.

The Operation of Climate

One element that Buffon had recourse to in order to describe, explain and judge the reasons for physical differences and geographic distribution of human beings was climate. Climate exerted more influence on plants than

animals and more on animals than on humans. The mobility of people and animals left them less subject to climate than plants, which were restricted to a much smaller geographic area.[15] For the various "species" of humans Buffon believed that climate played an important role that could help explain variety in physical appearance, social customs, and the levels of development attained by different peoples. The standard by which Buffon judged the level of refinement realized by non-Europeans inevitably referred back to Europe -- the paragon of perfection achieved under a temperate climate.[16] His use of climate as a means of assessing and categorizing non-Europeans according to standards created, justified, and extolled by Europeans themselves was also a practice employed by Montesquieu in his effort to discover the "laws" of nations.[17]

Buffon recognized that the argument that climate helped to determine skin color had a long history and he went to great lengths to demonstrate that Greek doctrines concerning the correlation between climate and skin color were essentially correct, notwithstanding their incomplete knowledge of the world's peoples, especially blacks in Africa. Buffon recognized that there were anomalies both in the climates of Africa and in the Greek doctrines concerning the correspondence of skin color to climate. One such anomaly was that many Africans farther south than the "Nubians" were lighter than they. Yet although this seemed to nullify the argument that skin color corresponded to

climate, Buffon steered his argument (and that of the Greeks) clear of this predicament by pointing to the role exerted by migration and the passage of time, for

> si l'on fait attention, d'un côté, à la migration des différents peuples, et, de l'autre, au temps qu'il faut peut-être pour noircir ou pour blanchir une race, on verra que tout peut se concilier avec le sentiment des anciens.[18]

The basic theory of a correlation between climate and color remained valid. The two things missing from the Greek doctrine that needed consideration to sustain their argument was the role of movement and the duration of exposure to the climate.

Buffon resolved this problem of explaining the "blackness" of the "Nubians" by stating that they were the original inhabitants of Africa and were from their origin black; they would remain black "so long as they ... live[d] in the same climate" and did not intermingle with people of a different color. Other residents of Africa who were not as black as the Nubians -- for example, the Ethiopians and Abyssinians -- were close to whites in origin. They

> tirent leur origine des blancs, puisqu'ils ont la même religion et les même usages que les Arabes, et qu'ils leur ressemblent par la couleur, sont, à la verité, encore plus basanés que les Arabes méridionaux; mais cela même prouve que, dans une même race d'hommes, le plus ou moins de noir dépend la plus ou moins grande ardeur du climat.[19]

Buffon suggested that the swarthy complexion of the Ethiopians and the Abyssinians resulted from migration and intermixing with people of a different color.

However, the influence of migration from one climate to another and that of mixing did not alter or change color immediately; this was evident by the example of blacks living in climates far-removed from their original ones. Yet Buffon maintained his thesis that migration, intermixture, and adoption of the prevailing customs in a different climate could bring about a gradual modification and eventual change of skin color:

> Il faut peut-être plusieurs siècles et une successions d'un grand nombre de générations pour qu'une race blanche prenne par nuances la couleur brune, et devienne enfin tout à fait noire; mais il y a apparence qu'avec le temps un peuple blanc, transporté du nord à l'équateur, pourroit devenir brune et même tout à fait noir, surtout si ce même peuple changeoit de moeurs et ne se servoit pour nourriture que des productions du pays chaud dans lequel il auroit été transporté.[20]

By adding a temporal index to his analysis of differences in color, Buffon not only sought to redeem ancient theories but also to ground his explanation of human "species" differentiation on exposure to climate and the adoption of customs and eating habits specific to each.

Yet Buffon was no absolute climatic determinist. Although climate was the first influence the naturalist examined when determining why people were certain colors, two other elements acted simultaneously with climate. The first was the kind of nourishment ingested and the second was "les moeurs." Climate directly affected the aliments available for consumption, whereas "les moeurs" impressed upon people distinctive habits and customs. Those people

fortunate enough to live a well-ordered existence under a good government, those without the daily worries of hunger and thirst, would naturally lead an easier and better life than the brutish hordes who merely survived from day to day. The constant scramble for nourishment characteristic of people who lived without society or good government, was symptomatic of an animal-like existence, a constant battle for survival that prevented civilized existence.[21]

On the Formation of Climates

What exactly made up a climate for Buffon? According to him a climate included several elements in combination:

> on doit entendre par climat non seulement la latitude plus ou moins élevée, mais aussi la hauteur ou la dépression des terres, leur voisinage ou leur éloignement des mers, leur situation par rapports aux vents, et surtout au vent d'est, toutes les circonstances, en un mot, qui concourent à former la température de chaque contrée; car c'est de cette température, plus ou moins chaude ou froide, humide ou sèche, que depend non seulement la couleur des hommes, mais l'existence même des espèces d'animaux et de plantes, qui tous affectent de certaines contrées, et ne se trouvent pas dans d'autres: c'est de cette même température que dépend par conséquent la différence de la nourriture des hommes; seconde cause qui influe beaucoup sur leur tempérament, leur naturel, leur grandeur et leur force.[22]

The outcome of this combination of factors was the air temperature which produced "the greatest ... the principal varieties" of human "species."[23] Air temperature depended on the elevation of the land, whether it was flat, undulating, hilly, or mountainous; distance from or

proximity to the sea; and location in relation to the winds, especially winds from the east. Another important element contributing to a climate's temperature was the humidity or dryness of the air. Thus the specific mixture of these elements formed climates.[24]

The plants and animals required for survival in a region were important to classifying the savagery or civility of peoples.[25] On the one hand, a strong, well-endowed physical appearance was proof that people benefited from a mild, temperate climate. In the Old World where, for example, the forests were cleared and the land cultivated, the climate altered by human agents, large plants and animals flourished and provided humans with excellent nourishment.[26] On the other hand, inhabitants of impoverished climates (either too hot or too cold) were inhabited by small weak plants and animals owing to the temperature, the aridity or moistness of the air, and the sterility of the land.[27] Poor climates thus occasioned both physical and mental weakness among inhabitants -- inferior in temperament, character, size, and strength.[28]

Buffon explained human difference with his theory of "degeneration" which postulated an original prototype from which all other species had degenerated.[29] For humans the prototype was the white European living in the European temperate climate, extending from forty to fifty degrees latitude. This was the area of the earth where humans came closest to perfection:

> c'est sous ce climat qu'on doit prendre l'idée de la vrai couleur naturelle de l'homme; c'est là qu'on doit prendre le modèle ou l'unité à laquelle il faut rapporter toutes les autres nuances de couleur ou de beauté: les deux extrêmes sont également éloignés du vrai et du beau.[30]

The greater part of Europe, extending from Georgia westward, possessed people who were "the most beautiful and the best made" in the world.[31] All non-Europeans were debased types that had developed in the course of migration, long exposure to hostile climates, and pernicious social customs. People who lived in climates less perfect suffered from having to consume coarse and unwholesome nutrients, which contributed, along with the poor climate, to degeneration. All those who were subjected to the twin evils of a less than benign climate and poor nourishment and "who live miserably[,] are ugly and poorly made."[32] To be miserable was to lack the amenities necessary for physical beauty, good government, and excellent customs. Every human "species" that did not live in the European climate suffered -- some more, some less -- from want of a completely civilized life.

Climate and Its Effects on People

By formulating the idea of degeneration -- a gradual perversion of the prototype -- and using it in conjunction with his climate theory, Buffon determined the level of development reached by different societies. Just as he judged climates according to hot, temperate, and cold,

Buffon extended his judgment about climate to its inhabitants. A pristine, mild one such as Europe's, was beneficial, whereas the climates of, for example, South America were "covered with woods ... [and] a group of inaccessible, uninhabitable mountains" that made it especially difficult to create or sustain a vibrant society.[33] The climate of South America virtually assured that no society there would ever reach a level of development approaching the standards set by Europeans. The "New World" did not denote simply a newly discovered land but a land that was physically new. Thus the ground was still moist because post-diluvian waters had only recently receded, hence the humidity was so thick that the sun's heat penetrated and dispersed it only with difficulty.[34]

The monotonous uniformity of the New World climate explained both the lack of variety of human "species" -- and, especially, the absence of blacks in its torrid zone. For sharp contrasts of hot and cold did not exist in South America because of the humidity, the mountain ranges, and the east winds that blew from the Atlantic.[35] In addition, because the New World was sparsely populated no civilizing activity had altered the physical environment.[36] The assorted climates of the Old World stood in marked contrast to the unvaried New World climate: "in the New World the temperature of the climates is more equal than in the Old World." Several reasons accounted for the temperature differential of the torrid zones in Africa and in the New

World. In South America the elevation of the land, the snow-capped mountain peaks (which cool the air), huge rivers, and forests increased the humidity, lowered the air temperature, and created a uniform human "species." In addition

> on doit observer que le vent d'est, qui souffle constamment entre les tropiques, n'arrive au Brésil, à la terre des Amazones, et à la Guiane, qu'après avoir traversé une vaste mer, sur laquelle il prend de la fraîcheur qu'il porte ensuite sur toutes les terres orientales de l'Amérique équinoxale: c'est par cette raison, aussi bien que par la quantité des eaux et des forêts, et par l'abondance et la continuité de pluies, que ces parties de l'Amérique sont beaucoup plus temperées qu'elles ne le seroient en effet sans ces circonstances particulières.[37]

These reasons summed up Buffon's explanation of why such contrasts in color separated the people living in the same latitudes in the Old and New Worlds. For Buffon the eastern wind explained why South American natives were not black. If the east winds did not bring cool, fresh air to South America, its inhabitants would have been much darker. Buffon's attitude toward a lack of variety was one of condescension: small of size, few in number, and incapable of altering their surroundings signaled to him that the climate and inhabitants of South America were backward.

Buffon added one other element to his argument explaining why there was such uniformity among the people of the New World, particularly among those living in southern and central parts: their savagery or only recently established civility.[38] It was obvious to Buffon that the

New World was a fresh and wild land, particularly ill-suited for the development of a well-ordered society. Even with the aggressive importation of European society (especially by the Spanish), South America remained "savage [and] uncultivated."[39] Although the people of Mexico and Peru had established governments, laws, and handed down customs from generation to generation, they were still in their infancy compared to those of other continents. The Peruvians themselves "could only count twelve kings" and thus had emerged from a savage state less than three hundred years earlier.[40] This was hardly time enough to have formed the kind of tradition needed for the creation of good social institutions and customs worthy of a completely civilized people.

Feebleness and Climate

The feebleness Buffon found characteristic of New World inhabitants resulted, in part, from their lack of a large population, which partially explained their inability to subdue and master their surroundings. Because nature was unrefined, raw and undeveloped, so too were New World residents -- they were powerless before their climate -- unable to escape the confines of their miserable existence.[41] A vicious circle of climatic dominance and physical dependence proved to Buffon that the New World was inferior and would long remain so.[42]

> Where far from making himself master of this territory as his own domain, he rule[s]

> over nothing; where having never subjugated either animals or the elements ... he is no more than an animal of the first order ... powerless to change nature or to assist her.[43]

Europeans, because of the mildness of their temperate climates, were less influenced by their surroundings and, in addition, were stronger, more sensitive, and less cowardly than people in the New World.[44] The lack of good manners demonstrated that the savages did not have any of the prerequisites -- law, social organization, common goals -- necessary for civilization. In regions

> où il n'y a ni règle, ni loi, ni maître, ni société habituelle, est moins une nations qu'un assemblage tumultueux d'hommes barbares et indépendants, qui n'obéissent qu'à leurs passions particulières, et qui, ne pouvant avoir un intérêt commun, sont incapables de se diriger vers un même but et de se soumettre à des usages constant.[45]

The difficult terrain, torrential rains, unfavorable air temperature, and high humidity lessened the chances for civilization to establish itself firmly in the New World. Buffon partially lessened this harsh indictment of the American savage by suggesting that vice and depravity issued from civilization, "that virtue belongs more to savage man than to civilized man."[46] Still despite the occasional Rousseauism, Buffon generally argued that civilized societies were much better off than savage peoples.[47]

Climate in Asia and Africa

When discussing people that inhabited parts of greater Asia, particularly the Laplanders, Russians, and those

farther to the east, Buffon assigned them all to the same type of climate (cold and uninhabitable for all other nations). Not only did they live under similar climates but they all had "approximately the same inclinations and even the same customs; they are all equally uncivilized, superstitious, and stupid." Likewise, their physical appearance conformed to their inferior and ferocious customs; they were "a small race of men with bizarre faces, the countenance of which is as savage as their manners."[48] While their appearance indicated a brutal disposition, their superstitions demonstrated that they were a miserable lot; they had conception "neither of religion nor of a Supreme Being." Because they were idolatrous, susceptible to the most aberrant beliefs, they were "more uncivilized than savages, without courage, without respect for themselves, shameless; these despicable people have only mores enough to be contemptible."[49] Even when compared to the moral sensibilities of the most depraved European, these people were devoid of all notions of civilized behavior.

Buffon's examination of the Japanese, Chinese, and Tartars centered on his contention that they were all related in spite of apparent differences. According to Buffon, the differences separating the Tartars from the Chinese, that is, facial characteristics, size, and customs were superficial and hid a more fundamental unity: "we can scarcely doubt that they [the Chinese] have much more in common with the Tartars than with any other people." The

discrepancies that did exist were ascribable "to the climate and to the mix of races."[50] In China a fruitful soil and benevolent climate in conjunction with nearness to the ocean had promoted the growth of a sophisticated society. Tartary, however, remained isolated, cut off from intercourse with other people; the geographic seclusion of the Tartars forced them to "remain wanderers in their vast deserts under the sky, the rigor of which can only support tough and uncivilized men."[51] Because the Tartars, like all migratory peoples, were constantly moving and never settled, they could not form a society capable of customs or morals approaching those of Europeans. The difficulty of survival from day to day precluded them from such efforts.

The similarities in appearance and customs of the Japanese and the Chinese showed that they were from "one and the same race." Their physical differences were immaterial and disguised the true nature of their relationship; although the Japanese were "more yellow or brown because they live[d] in a more southern climate" their darker skin was minor compared to the features that united them. Physically both had black hair, small eyes, wide faces and flat noses, and little if any facial hair. In addition to physical similarities, inhabitants of these two countries were

> fort altier, aguerris, adroits, vigoureux, civil et obligeant, parlant bien, féconds en compliments, mais inconstants et fort vains; ils supportent avec une constance admirable la faim, la soif, le froid, le chaud, les veilles, la fatigue et toutes

> les incommodités de la vie.[52]

The Chinese and the Japanese were proud and haughty and sustained themselves admirably when subjected to life's hardships. Yet they did not measure up to European standards physically, intellectually, or socially. Both remained substantially behind Europe in terms of their refinement. Nevertheless, the Japanese and the Chinese were well-versed in "the arts and in all of the crafts," and except for strange customs like footbinding, were quite civilized (policés).[53]

Buffon was convinced that while there was a "uniformity in the color and in the shape of the natural inhabitants of America" the opposite was true for Africans. Whereas America was a New Land sparsely peopled, Africa was old and heavily populated. There the climate was variable and the people markedly differentiated:

> brûlant, et cependant d'une température très inégale suivant les différentes contrées; et les moeurs des différentes peuples sont aussi toutes différents .... Toutes ces causes ont donc concouru pour produire en Afrique une variété dans les hommes plus grande que partout ailleurs.[54]

The age of the African continent, the variety of peoples and moeurs followed from the type of climate in which they lived. People living on the northern reaches of Africa, from the Barbary coast eastward, were situated under "the temperate zone on this side of the tropic" and were influenced by the Mediterranean. Because of the mild

temperatures, the product both of air coming off the Mediterranean and the snows atop of the Atlas Mountains, "the men there are white and only a little swarthy." As one moved to the south the heat increased because of the distance from both the mountains and the Mediterranean. Progressing southward, into the tropical zones, "the heat becomes much greater and the men are very brown but they are not yet black."[55]

Further to the south, around seventeen to eighteen degrees latitude, the extreme heat accounted for the blackness of the inhabitants. According to Buffon, travellers had reported temperatures of up to thirty-eight degrees centigrade in Senegal and these reports confirmed, in his opinion, that air temperature determined skin color. Although lacking statistical evidence about the temperature in "Nubia," Buffon surmised from travel reports that the temperature there was quite hot. One of the main reasons for the hot air in "Nubia" was the winds which

> échauffent l'air au point que le vent du nord des Nubiens doit être un vent brûlant; d'autre côté le vent d'est, qui règne le plus ordinairement entre les tropiques, n'arrive en Nubie qu' après avoir parcouru les terres de l'Arabie, sur lesquelles il prend une chaleur que le petit intervalle de la mer Rouge ne peut guère tempérer.[56]

As a result of the east wind, Nubians were very black, much blacker than the people of Senegal. The winds that finally reached the Nubians did so only after having traversed most

of Arabia, soaking up the heat from the land, which made living there "unbearable."[57]

Thus Buffon concluded that under the tropics in Africa, people in the west "feel and experience a much greater heat" than those in the east where "the east wind arrives ... with a freshness it gained while travelling across a vast ocean." In western Africa the torrid zone was the hottest in the world and because of the intense heat, the blacks were the "blackest of all."[58] To the east, mainly as a result of cool ocean breezes, the people were lighter; "the pronounced differences between these two types of blacks comes from the heat of the climate, which is very great in all parts of the east [of Africa] but is excessive in western Africa."[59] Buffon further developed his theory by arguing that all other peoples residing under the torrid zone (to the east and west of Africa) were "extremely brown," if seldom black. The reason for this, according to Buffon, was that the majority of these people lived on or near islands (or in the New World) exposed to winds that passed over broad stretches of water that cooled the air.[60] Thus concluded Buffon "one finds negroes only in the earth's climates where all the circumstances are joined together to produce constant and excessive heat."[61]

Two other pieces of evidence confirmed for Buffon his view that air temperature accounted for skin color. The first came from a dissection performed on a black in 1702 where the exposed foreskin of the penis was black, while the

skin protected from exposure remained white. The second piece of evidence, and perhaps much more important for Buffon, was that "children [of blacks] are born white or rather red, like other men: but two or three days after they are born their color changes ... and by the seventh or eighth day they are all black."[62] Buffon concluded that only an external agent was capable of such alterations in skin color.

Because of Buffon's belief that air temperature was the principal mechanism affecting skin color he theorized that over a long duration skin color could change because of exposure to a different climate:

> il y a ... toutes les raisons du monde pour présumer que, comme elle ne vient originairement que de l'ardeur du climat et de l'action longtemps continuée de la chaleur, elle s'effaceroit peu à peu par la température d'un climat froid.[63]

Thus if blacks were moved from their native climate to a temperate or cold one "their descendants in the eighth, tenth, or twelfth generations would be much less black than their ancestors and perhaps as white as the native peoples of the cold climate."[64] A slow and gradual process of change could eventually undo the effects of climate. Exposure to the sun and the temperature of the air accounted for skin color because "the same causes that darken us when we [Europeans] are exposed to the heat of the air and sun" worked in a much stronger fashion on Africans.[65]

Climate and Monogenism

Although Buffon spent his life studying nature and its immense profusion, when it came to categorizing the peoples he discussed he was at pains to show that despite diversity they had a single origin and that whatever differences existed -- physically, intellectually, morally -- resulted from the action of external factors that over time altered them. Never the sentimentalist when discussing the differences between savage and civilized life, Buffon nonetheless sought to account for both diversity and unity in the human species.[66] Actually diversity of the human species derived from unity: the prototype model -- the white European -- served as Buffon's exemplar and permitted him to validate empirically the theory of "degeneration," the role of migration, and the effects of external agents, especially climate by.[67] Migration, exposure to hot or cold climates, and poor nourishment contributed adversely to residents of such areas. Not only did a poor climate cause degeneration but it led also to pernicious customs, superstitious beliefs, moral turpitude.[68] Skin color and the excellence of customs and morals were inextricably linked in Buffon's analysis and the further he descended down the scale of civilization the less were his discoveries palatable. Yet to descend from the heights to the depths of civilization was to remain within the same general framework of humanity because external factors causing degeneration

were reversible and, in fact, linked all humans by infinite gradations.[69] Degeneration served a dual function. It explained the divisions and subdivisions of the human species that had manifested themselves through the course of history.[70] And it served too as a justification for the gentle tone with which Buffon lauded Europe and lambasted those "species" who had deviated from the European prototype. Over the long sweep of history these human species had dispersed, exposed themselves to adverse climates and unhealthy nourishment, branched off from one another and diverged in physical appearance, intellect, custom, and moeurs yet they remained connected by the unity of their origin.[71]

Conclusion

Buffon's method of scientific description, his commitment to promoting his method of natural history, and his eloquent style made him the foremost theorist of natural history in eighteenth-century France. When he invoked the enduring theme of climate he did so in the scientific method of observation, comparison, and description. Thus he integrated climate theory into his overall scientific method. The inundation of reports about these exotic peoples, the incomprehension that confronted Europeans when they realized that they were one among many, demanded explanation. This Buffon duly furnished. And in doing so he reinforced the belief that climate profoundly affected

the physical appearance, customs, and beliefs of different peoples and at the same time reaffirmed the unity of all humanity by developing a sophisticated monogenist argument that took into consideration migration, nourishment, length of exposure to the sun, and the various elements that constituted climate. By scientifically citing climate as a physical component that produced the varieties of peoples and contributed to their physical, mental, and moral constitution, Buffon committed himself to an enterprise that attested to European superiority because of its temperate climate which allowed for laws, good customs and government, in a word, civilization. In Buffon an attitude of incredulity, softened by the recognition that climate carried with it certain maxims that were difficulty for people to overcome, were combined to produce an explanation for difference of physical appearance and color, nutrition, and moeurs.

ENDNOTES

1.Otis E. Fellows and Stephen Milliken, Buffon (Twayne's World Authros Series, 243), ed. Sylvia E. Bowman (New York: Twayne Publishers, Inc., 1972), 40-41.

2.Ibid., 19.

3.Durand Echeverria, Mirage in the West: A History of the French Image of American Society to 1815 foreword by Gilbert Chinard (Princeton: Princeton University Press, 1957), 4-5.

4.P. J. Marshall and Glyndwyr Williams, The Great Map of Mankind: Perceptions of New Worlds in the Age of Enlightenment (Cambridge, Mass.: Harvard University Press, 1982), 2. This book is invaluable for its concentration on English perceptions and offers, in addition, an overall European perspective that shows the effect that European thought as a whole had on the English.

5.For a general survey of Buffon's life and his work consult Fellows and Milliken, Buffon, 15-65.

6.Clarence J. Glacken, Traces on the Rhodian Shore: Nature and Culture Culture in Western Thought from Ancient Times to the End of the Eighteenth Century (Los Angeles: University of California Press, 1967), 587-88.

7These two ideas will be taken up later after having set forth Buffon's intellectual position.

8.Buffon, "Initial Discourse on Method," in From Natural History to the History of Nature: Readings from Buffon and His Critics, ed. and trans. by John Lyon and Phillip Sloan (South Bend, Indiana: University of Notre Dame Press, 1986), 100.

9.Ibid; Robert Wohl, "Buffon and the Project for a New Science," Isis 51 (1960), 186-87.

10.Ibid.

11.Buffon, "Initial Discourse," in From Natural History to the History of Nature, 100; for a lucid, yet somewhat outdated, study of the idea of the chain of being consult Arthur O. Lovejoy, The Great Chain of Being: A Study of the History of an Idea (Baltimore: Johns Hopkins University

Press, 1933); and the article "Animal," L'Encyclopédie, ou dictionnaire raisonnée des sciences, des arts et des métiers, par une société de gens de lettres vol. I, 469, 1755.

12.Buffon, "Initial Discourse," in From Natural History to the History of Nature, 101-02.

13.Wohl, "Buffon and the Project for a New Science," 187-88.

14.Ibid., 189.

15.James Larson, "Not Without a Place: Geography and Natural History in the Late Eighteenth Century," Journal of the History of Biology 19 (1986), 447-88.

16.Buffon, "Variétés dans l'espéce humaine," in De l'homme ed. Michèle Duchet (Paris: François Maspero, 1971), 16; Michèle Duchet, Anthropologie et Histoire au siècle des lumières: Buffon, Voltaire, Rousseau, Helvétius, Diderot (Paris: François Maspero, 1971), 274-75.

17.Marshall and Williams, The Great Map of Mankind, 134.

18. Buffon, "Variétés dans l'espèce humaine," 291-92.

19.Ibid.

20.Ibid.

21.Ibid., 270-71.

22.Ibid., 388.

23.Ibid.

24.Ibid.

25.Ibid., 320.

26.Antonello Gerbi, The Dispute of the New World: The History of a Polemic, 1750-1900 trans. Jeremy Boyle (Pittsburgh: University of Pittsburgh Press, 1972), 14-26.

27.Ibid.

28.Buffon, "Variétés dans l'espèce humaine," 320.

29.Ibid., 17; for Buffon's theory of degeneration see Farber, "Buffon and the Concept of Species," 259-284; Wohl, "Buffon and the Project for a New Science," 186-199; and Antonello Gerbi, The Dispute of the New World, ch.1.

30.Buffon, "Variétés dans l'espèce humaine," 319.

31.Ibid.

32.Ibid., 319-20.

33.Ibid., 309.

34.Gerbi, The Dispute of the New World, 7-8 & 14.

35.Buffon, "Variétés dans l'espèce humaine," 310.

36.Glacken, Traces on the Rhodian Shore, 588-89

37.Buffon, "Variètès dans l'espèce humaine," 310.

38.Ibid.

39.Ibid., 311.

40.Ibid., 309.

41.Gerbi, The Dispute of the New World, 6-7.

42.Ibid., 14. In spite of this harsh indictment of the New World climate Buffon conceded that it did not mean that that the New World would be forever impotent. Indeed Buffon was sensitive to and championed the influence that humans could and did have on their surroundings; for a good summation of Buffon's analysis of the human capacity to alter the environment consult Clarence J. Glacken, "County Buffon on Cultural Changes of the Physical Environment," Annales of the American Association of Geographers 50 (1960), 1-21.

43.Buffon, Oeuvres completés, Vol. XV 443-46, cited in Gerbi, The Dispute of the New World, 5-6.

44.Duchet, De l'homme, 16.

45.Ibid., 296.

46.Ibid., 297.

47.Ibid., 297.

47.Ibid., 319-20.

48.Ibid., 223-25.

49.Ibid., 226.

50.Ibid., 234.

51.Ibid., 236.

52.Ibid., 235.

53.Ibid.

54.Ibid., 313.

55.Ibid.

56.Ibid.

57.Ibid.

58.Ibid., 314.

59.Ibid.

60.Ibid., 314-315.

61.Ibid., 315-16.

62.Ibid., 316.

63.Ibid.

64.Ibid.

65.Ibid., 318.

66.Duchet, Anthropologie et Histoire, 249.

67.Duchet, "Introduction," De l'homme, 30-31.

68.Buffon, "Variétés dans l'espèce humaine,"

69.Claude Blanckaert, "On the Origins of French Ethnology: William Edwards and the Doctrine of Race," in Bones, Bodies, Behavior: Essays in Biological Anthropology ed. George Stocking Jr. (Madison University Press, 1988), 28.

70.Ibid., 32-33.

71.Ibid., 223-24.

CHAPTER V

CLIMATE'S ROLE IN EIGHTEENTH-CENTURY FRANCE: CONCLUSION

Montesquieu and Buffon were not the only writers to consider the problem of climate and its influence. No other doctrines were so fully elaborated as those of Montesquieu or Buffon, but they were still prevalent. In general ideas concerning climate existed for several reasons: the tradition of ascribing to climate characteristics that made it easier to categorize people according to physical appearance and mental capacities, a tradition whose origins reached back to antiquity; the efforts of Montesquieu and Buffon to make sensible the tremendous varieties of peoples they came upon when composing their works; and lastly the efforts of many lesser-known writers.

With this in mind we will now turn briefly to the Académie Royale des Sciences of Paris and Diderot's Encyclopédie to see how climate was conceived in these two avenues for the dissemination of knowledge. In the Academy of Sciences after 1750 inchoate and often unarticulated references were made to climate but mostly these references were concerned with air, its temperature and quality in each climate or the weather of a particular area or climate zone

-- seldom if ever were ideas about climate and weather drawn together as they had been in Montesquieu or Buffon. In the case of the Encyclopédie reference to climate was more explicit and less equivocal and almost without exception supported Montesquieu's view that climate profoundly infuenced laws, manners, and moeurs of societies.

The Academy of Sciences in Paris

Founded by the French crown at the behest of a small coterie of scientists in 1666, the Academy of Sciences eventually came to occupy a strategic location in the French scientific landscape. Until its dissolution in August 1793 by the National Convention, the Academy was the most prestigious scientific institution in Europe, small in the number of initiates, circumspect in its policy of admissions.[1] Yet when first created the Academy toiled in the shadows of its cross-channel rival -- the Royal Society of London -- principally because it lacked the spirited intellectual atmosphere that served the Society profitably during the seventeenth century.[2]

But after the turn of the century the fortunes of these two stalwarts of scientific activity reversed relative to one another. In the course of the eighteenth century the Paris Academy eclipsed the Royal Society as the most prestigious scientific organization in Europe. One of the main reasons for this reversal had to do with the strong financial and institutional support the French crown

provided the Academy -- a state of affairs that had also accounted for its lack of success commensurate to the Royal Society in the previous century.[3]

The crown's recognition and support were both a blessing and a blight for the functioning of the Academy. It was a blessing in that financial pressures eased for those who became members, which allowed them to pursue science in a congenial institutional setting. In addition the policies and procedures drawn up by the Academy and the crown separated the knowing savant from the part-time scientist and, more importantly, from the charlatan.[4] Yet it was a blight to the Academy in that members were often forced to delay their own research in order to pronounce on matters which the crown requested expert opinion. But even this detour contained unexpected benefits. As it was recognized as the repository of scientific and technical expertise, the Academy assumed the position of arbiter of knowledge, able to approve or disapprove any invention or scientific treatise submitted for its review.[5]

The original vision of the Academy as a communal effort where scientists worked together for the furtherance of knowledge was quickly recognized as unworkable. Thus by the mid-1680s the Academy abandoned its original ideal in favor of individual research and competition, reserving for itself only the right to stand as judge of scientific competence.[6] The official change of policy occurred with the formal

revision of the Acadmey's Charter in 1699, which ushered in a period of remarkable institutional growth.[7]

The structure of the Academy, like that of all institutions of the Old Regime, was corporatist -- a reflection of French society. It was hierarchical, with special privileges granted to those with full membership. Membership levels ranged from the honoraires -- who were chosen because of social rank -- to the associés libres, whose only right was to attend sessions of the Academy. In between and in descending order were the pensionnaires, associés, and adjoints. The total number of Parisian members hovered around seventy, omissions being made whenever the crown or the Academy deemed it expedient to grant exceptions. In addition to its Parisian membership the Academy developed an extensive network of contacts throughout Europe. These ranged from the associés regnicoles (Frenchmen from the provinces) to an honorary category for foreign members.[8] Work done under the Academy's auspices was published in its Histoire et Mémoires de l'Académie Royale des Sciences (1699-1792). The Histoire was the preserve for members' publications, and the Mémoires were for those outside Paris who submitted research judged worthy by the Paris Academy.[9]

Within this institutional framework ideas about climate and its influence existed, ideas that seem muted, shorn of the theoretical rigor or centrality attributable to the theories of Montesquieu or Buffon. Nevertheless, references

to climate demonstrate that it still occupied a role of measured, if diminished importance. But these references were ambiguous, unable to break from the traditional association of climates with the parallels of latitude yet at the same time moving slowly toward a definition of climate more attuned to those proffered by Montesquieu or Buffon.

Climate in the Academy of Sciences

A principal concern that appears repeatedly in the Academy's publications was with the quality and the differences of air in various locations.[10] It was "our principal nourishment," of which humans could not be "entirely deprived." The quality of air depended upon the surrounding land from which "air acquires different qualities by the evaporation that rises from the earth." Because land varied greatly -- marshes, woods, fields, congested cities -- air took on qualities peculiar to each location. Thus in heavy thick soil and in marshy lands the air was dominated by "sulphurs, salts, [and] minerals" but where "woods and fields" prevailed flowers or pasture land would fill the air with an aromatic sweetness. City air was particularly harmful because of the inhabitants' "transpiration," the crowded conditions, and the smoke which caused infections to spread quickly. From this it was surmised that "therefore each climate, each place has a different air, which changes itself with the seasons" and

was the "natural cause of popular diseases," especially where "the land produces a harmful vapor."[11] Any place that was enclosed, where the air could not circulate properly increased the danger of disease because "corrupted air is a fruitful source of illness."[12] But since "the constitution of living bodies [is] always proportionate to the nature of the earth," the original inhabitants of a region always suffered less than those from places with a different air.[13]

One vexing problem was the different air temperatures of France and Canada even though they were situated in the same "climates." "The difference in the temperature of these two countries" was "considerable" even though their "climates seem to be the same."[14] According to M. De Caire there had been "three principal causes adduced for the severe cold" in Canada: the large snowfalls; Canada's proximity to the North Sea; and the "elevation of the land" and the numerous waterfalls.[15] De Caire was opposed to these causes just as he disagreed with the "famous M. Halley" who hypothesized that the northernmost part of Canada "was formerly very close to the [north] pole" but that it had since moved southward. He dismissed Halley's theory by stating that even though "our globe had endured great changes" such explanations were preposterous and "abuse notions that ... are useful ... to explain nature's phenomena."[16]

Neither could he countenance the opinion that the mountains in Canada accounted for the extreme cold because

they were "further from Quebec than the Alps and the Pyrenees [were] from Paris," proof, in his estimation, that they were not the source. In place of these multiple causes De Caire substituted one, the winds from the northwest which were "the sole and unique cause of all the cold in Canada." They accounted not only for the cold winters by "bring[ing] about changes in the cold or warm air of regions they [had] traversed" but

> c'est par les vents qui viennent de la Sibérie, qu'à Astracan, ville situé au 46d 22' de latitude, la liqueur du thermométre descend jusqu'àu 24e degré ½ au-dessous de la congélation; & c'est aussi par le même principe, quoique l'effet soit différent, que le vent qui vient d'Afrique apporte à Malte, pendant l'été, une chaleur insupportable. On pourroit citer d'autres lieux de la terre, où les vents produisent encore les mêmes effets.[17]

Not only did northwest winds cause the cold Canadian winters, the same principle with different results applied everywhere and allowed the observer to discern where the dominant air temperature of any region originated. Although not used in conjunction with the word climat, the same ideas informed de Caire's thinking about the causes of climate that Buffon had used with greater force and creativity in his concern with its effects. Of course De Caire set for himself the infinitely less difficult task of explaining why Canada was so bitterly cold in the winter instead of why there were so many different plants, animals, and peoples.

An important publication that allowed Buffon to put forth and make respectable his La Théorie de la Terre was a treatise submitted by Jean Jacques d'Ortous de Mairan. Mairan had followed Fontenelle as secretary of the Paris Academy of Sciences in 1741 after the latter's death.[18]2 In 1765 Mairan added a supplement to a paper first presented to the Academy in 1719 and expanded in 1749.[19] Mairan theorized that the sun was not the only source of heat and posited instead that the combination of the sun's rays and the earth's "internal fire" warmed the earth. He collected vast amounts of data on air temperature in the winter and summer throughout the world and correlated them with the amount of sunlight any given place received. In addition to the air temperature and the earth's "internal fire" there were "local and accidental causes" for temperature variation in the same climate such as location, topography, and proximity to water.[20] But still there was no correlation drawn between his theory of air temperature, his meteorological observations, and the new definition of climate listed by the Académie Française.[21] To Mairan climate was still a geographical designation based on the parallels of latitude.[22] Indeed from his calculations he concluded that under each climate

> une infinité de causes locales, telle que des bois, des eaux, la hauteur du sol, la nature du terrein, & c. peuvent troubler cette uniformité [of reports from the same latitudes that differed]; mais en prenant un milieu, comme on fait toujours en pareille occasions, M. de Mairan arrive à cette étonnante

> conclusion, que la plus grande chaleur de l'été est la même dans tous les climats depuis l'Equateur jusqu'aux cercles polâires, tandis que les hivers y sont prodigieusement différens.[23]

Mairan was a well-respected scientist and his authority made his theory of the earth's internal heat more plausible and rationally explained different temperatures in the same latitude.[24] Yet three years after the Académie Française had officially revised the definition of climate, Mairan remained attached to the traditional meaning. Thus among many scientists and contributors to the Histoire and Mémoires the longstanding notion of climatic zones still dominated scientific discussion of weather.

The "Encyclopédie"

The Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers (1751-65) was the most important publishing venture of the eighteenth century. Its guiding ideal was to create in an easily accessible format a vast compendium of human knowledge. Its chief purpose to collect useful knowledge for practical purposes.[25] To dispel superstition and to break the stronghold of traditional learning were the goals set by Denis Diderot and Jean d'Alembert, the two principal collaborators in the Encylopédie's production.[26]

The original ideal of an encyclopédie started modestly. The first proposal was to translate into French Ephraim

Chambers' Cyclopedia pupblished in 1728 in 1745. Diderot and d'Alembert entered into the picture innocently enough at first -- Diderot as a translator and d'Alembert as a consultant on mathematical questions. But by 1747 Diderot assumed editorial control of the project and d'Alembert became an important contributor. Now the Encyclopédie was no longer to be merely a translation of Chambers's work; the more ambitious goal was set to fill in the gaps left by Chambers. By June 1751 the first of eight proposed volumes (and two volumes of plates) was published and then followed quickly by a second.[27] Given that the purpose of the Encyclopédie was to gather under one heading all useful human knowledge it was not surprising that the original proposal was inadequate; eventually it expanded to include seventeen volumes with eleven more of engravings. In its final form the Encyclopédie was a work characteristic of the Enlightenment's desire to bring to the educated public all "branches of human knowledge" from which they could draw effective principles for everyday application.[28]

Climate in the Encyclopédie

When the article "Climat" (1755) first appeared in the Encyclopédie the term still carried the traditional meaning of the parallels of latitude. According to the Encyclopédie a climate was a

> portion ou zone de la surface de la terre, terminée par deux cercles parallèles à l'équateur, & d'une longeur telle que le plus long jour dans le parallèle le plus

> proche du pôle .... les climats se prennent donc depuis l'équateur jusqu'aux pôles, & sont comme autant de bandes ou de zones paralleles à l'équateur: mais il y a à rigueur plusieurs climats dans la longueur de chaque zone.[29]

After presenting the definition as found in the Académie Française, the article provided a brief etymology of the word from its Greeks origins. The Greeks had initially recognized only seven climates, only five were habitable. However, since the voyages of discovery had commenced "the moderns" had realized the Greek's errors and now recognized "thirty climates on each side" of the equator.[30]

After reciting the official and the Greek meaning of climate the article offered the "general" definition of climate which was

> une terre différente d'une autre, par rapport aux saisons, aux qualités de la terre, ou même aux peuples qui y habitent, sans aucune relation aux plus grands jours d'été.[31]

Thus "climate" was recognized as a geographical designation but included the seasons, the nature of the land, and the inhabitants of the particular location under examination with no reference to the length of the longest day of the year. Climate's were not associated with one particular type of weather because many factors contributed to different temperatures in the same climate:

> une infinité de circonstances, comme les vents, les volcans, le voisinage de la mer, la position des montagne, se compliquent avec l'action du soleil, & rendent souvent la température très-différente dans des lieux placés sous le même parallèle.[32]

No facile connection between climatic zone and temperature was proposed, instead all these physical factors must be considered jointly in order to understand the operation of a climate. Not only does this excerpt strongly suggest that the old definition of climate as a parallel of latitude was disappearing but that notions of what constituted a climate as defined by the greatest modern climate theorists, Montesquieu and Buffon were starting to prevail. Explicit reference is made to Montesquieu, "the illustrious author of l'esprit des lois," and his examination of the "influence of the climate on the moeurs, the character, and the laws of people." The presence of heat made for a "weak body and ... lively imagination," which in turn encouraged laziness. Such a situation could be corrected only by "wise legislators" who "must ... by their laws encourage work instead of favoring indolence." But what had in fact happened in such climates was that the speculative mind of inhabitants of warm climates had been led to "dervichisme," that is monkery.[33] The inhabitants of India were specifically cited as an example of how positive laws must incite work to offset the natural tendency to laziness.[34]

Physicians too recognized the importance of climate but they used "climate" as "the exact synonym for temperature." Thus it was much more restricted in usage and differed greatly from "the sum of all the general or physical causes that can act on the health of inhabitants." Yet in order to understand climate's tremendous influence completely it was

important to take into consideration all the combined factors that Montesquieu and Buffon had previously enumerated: air, wind, water, the sun, quality of the food. From their consideration one could deduce the combination of factors or the one dominant factor most important in forming the physical characteristics of a people, specifically "height ... vigor ... skin and hair color ... the length of life ... and disease."[35]

Climate also effected the moeurs and customs of diverse peoples. Those who lived in warm, temperate, and cold climates differed not only physically but in their actions. In warm climates people were small and lazy, less likely to engage in hard work. In addition they were "less white" than others and "more precocious," thus "love between the two sexes was a blind and impetuous desire, a function of the body, an appetite, a cry of nature." In the temperate climates love was a "passion of the soul, a considered affection ... systematic, a product of education," while in cold climates love was "the tranquil sentiment of little pressing need."[36] Each of these observations echoed, with little alteration, the opinions of Montesquieu.

This brief glance at climate and its definition in the Encyclopédie demonstrates that Montesquieu's theory of climate was accepted as valid by the most important publishing venture of the Enlightenment. In addition it shows how the old definition of climate was gradually eased out of circulation and replaced by one that took into

consideration the various physical elements that constituted a "climate" and their role in the general relationship between physical and moral life.

Conclusion

Ideas about climate have exercised an important function in the history of Western thought, especially as a means of making more understandable the variety of people known to exist and their laws, institutions, moeurs. From the depths of antiquity to the Renaissance and Enlightenment the idea of climate proved itself flexible enough to adopt to some of the most pressing concerns of those who used it, whether Greek physicians, Renaissance historians, or Enlightenment political theorists and natural historians. Each employed climate and related ideas to account for the diversity that surrounded them and thus perpetuated the idea itself.

With the Renaissance new avenues of learning were paved, avenues that led to a greater awareness of the importance of history and its influence on the development of societies. In order to grasp more completely the effect physical surroundings had on people's laws, institutions, and social customs, Bodin adopted prevalent ideas about climate, revamped and incorporated them into his effort to better understand how climate operated in nature and its role in human historical development. Combining a long held belief in the power of astrology, the tradition of climatic

zones, the particulars of an exact location and the array of factors that created them, Bodin was able to explain human variety, its existence, and its importance. By remolding prevalent ideas about climate and deftly synthesizing them into his historical analysis Bodin was able to answer these questions in a manner that reflected fully the concerns of Renaissance humanism with knowledge and education, the role of nature in human affairs, and lastly the importance of a reverent attitude toward the Creator by whose wisdom all things had their proper place.

In eighteenth-century France theories of climate were once again revived and employed to explain the often bewildering reports of voyagers who sent back to Europe descriptions of the physical characteristics of many recently discovered peoples, their moeurs, laws, social and political institutions. A common thread woven throughout these reports was concern with variety and difference, both within these societies themselves and especially in relation to Europe. These differences had to be explained not only in order to make these societies understandable but to reaffirm the standards by which Europeans lived, for by their very existence they represented a challenge to Europe.

In the works of Montesquieu and Buffon -- political theory and natural history respectively -- theories of climate were seized upon as a convenient means of explanation and categorization of people based on a combination of external physical elements that made these

societies comprehensible. Most important among these physical elements were the kinds of air (humid or dry), air temperature, geography, soil quality, latitude, and wind. Although their tasks were in some ways quite different, many similarities may be found in their works. Both Montesquieu and Buffon discerned in the world a pattern of physical relationships that explained diversity because it was universally applicable. By resorting to the ancient idea of climate and adapting it to their investigative methods in novel ways both were able to create viable explanations for heterogenous peoples by an appeal to all-encompassing physical factors that affected, in varying degrees, all peoples.

As noted above ideas about climate were not the exclusive domain of individual theorists, although they usually received their most cogent expression in their works. Implicitly in the Academy of Sciences and explicitly in the Encyclopédie climate received the attention, on the one hand, of scientists and, on the other, of those charged with providing the literate public with knowledge useful to increased understanding. In the Academy of Sciences the categories that constituted "climate" for Montesquieu and Buffon were recognized and investigated yet no explicit association tied "climate" to weather. To the contrary, in the Encyclopédie explicit reference was made to Montesquieu and his climate theory.

His theory was upheld with little or no opposition. In full agreement with Montesquieu the article "Climat" stated that the study of climate would allow for better understanding of the laws, moeurs, and social institutions of all peoples provided that one did not ascribe to climate complete domination. It was just one factor among many that needed thoughtful consideration.

Climate in the Nineteenth Century

Late in the eighteenth and early in the ninteenth century the human sciences began to take definite form and in doing so lent a new urgency to the study of human beings, their differences and similarities.[37] The eighteenth-century debates between monogenist and polygenist theorists were settled in favor of polygenist adherents at the turn of the century. Henceforth polygenist arguments dominated the theoretical pronouncements and the study of people. The effect this had on climate theory was to diminish its importance; the people who supported arguments for multiple racial origins did not accept theories of climate as important because
it was not pertinent to their theoretical position.

The importance of the "Ideologues" in these circumstances was quite important. Intellectual descendants of the abbé de Condillac, the Ideologues believed fervently in the "science of ideas" and they proposed to found their science on an integrated examination of the "physical,

intellectual, and moral" aspects of human existence.[38] Yet the Ideologues were not completely united in their program and were split into two branches represented by P.-J.-G. Cabanis and Destutt de Tracy. De Tracy upheld the universalist tradition of the Ideologues by maintaining that human nature was everywhere the same, the ability to receive, respond, and combine sense impression was universal, despite particulars of the physical environment. Cabanis, however, was more sympathetic to polygenist arguments (though he remained a mongenist) that human beings had been shaped by variety of circumstances that imprinted physical traits that were difficult, if not impossible, to eradicate.[39] In the end Cabanis's analysis of physical types won out over the universalist implications of de Tracy and in this environment was born the virulent doctrine of race that dominated anthropology and ethnology in nineteenth-century France.[40] Thus in nineteenth-century France a backlash developed against those who attributed differences between the "races" to climate and in its place emerged racial interpretations that weakened climatic arguments because of their implications of a unifying heredity linking together all the "races" of man.

ENDNOTES

1.See Roger Hahn, The Anatomy of a Scientific Institution: The Paris Academy of Sciences, 1666-1803 (Los Angeles: University of California Press, 1971), ch. 1 for its founding and ch. 8 for its demise during the Revolution; for an analysis of how the Academy's small size contributed to its activity by promoting competition consult Charles C. Gillispie, Science and Polity in France at the End of the Old Regime (Princeton: Princeton University Press, 1980), 83-4; and for a look at scientific activity from 1750 to the dissolution of the Academy consult Thomas L. Hankins, Science and the Enlightenment (New York: Cambridge University Press, 1985); and for the organization of science in France after the Academy's dissolution see Maurice Crosland, The Society of Arcueil: A View of Science at the Time of Napoleon I (London: Heinemann, 1967).

2.For a comparison of the founding of the Royal Society of London and the Paris Academy of Sciences see James. E. McClellan III, Science Reorganized: Scientific Societies in the Eighteenth Century (New York: Columbia University Press, 1985), ch. 2. McClellan states that the Royal Society was, in the seventeenth century, the more vigorous and open-minded institution when it came to scientific pursuits, whereas the Paris Academy was an inward looking and closed community -- a situation that stifled scientific investigation.

3.Ibid.

4.For an excellent appraisal of the role of professionalism in France, consult Gerald L. Geison, ed. Professions and the French State, 1770-1900 (Philadelphia: University of Pennsylvania Press, 1984); and for a later period Robert Fox and George Weisz, eds. The Organization of Science and Technology in France, 1808-1914 (New York: Cambridge University Press, 1980).

5.Hahn, The Anatomy of a Scientific Institution, 44-46.

6.Ibid., 23-28.

7.Ibid., 58-70.

8.Gillispie, Science and Polity, 82-83.

9.Ibid., 82-83; 98-99.

10.For an example see the measurements published in the Mémoires on a regular basis that measured air temperature yearly, recorded the cycle of illness and the season; and commented on the quality and quantity of agricultural production in a given region. These reports are scattered through the Mémoires, a sample listing demonstrates the practical activity to which the Academy was dedicated. Jacques Cassini, "Observation météorologiques faites à Aix par M. de Montvalon, conseiller au parlement d'Aix, comparées avec celles qui ont été faites à Paris, " (1730) 1732, 1-9; Charles Françpois de Cisternay du Fay, "Observations météorologiques faites à Utretcht, pendant l'année MDCCXXXIV, extraites d'une lettre de M. Musschenbroek," (1734) 1736, 564-66; Henri Louis Duhamel du Monceau, "Observation botanico-météorologiques faites à Quebec par M. Gautier, pendant l'année 1743," (1774) 1748, 135-55; Jean Paul Grandjean de Fouchy, "Observations météorologiques faites à l'observatoire royal pendant l'année M. DCCXLIV," (1744) 1748, 5-7; idem, "Observations météorologiques faites à l'observatoire royal pendant l'année M. DCCXLV," (1745) 1749, 549-51; Giacomo Filippo Maraldi, "Observations météorologiques de l'an MDCCXXVI," (1726) 1753, 332-41; M. P. Cotte, "Mémoire sur la Météorologie, Qui contient l'extrait des Observations Météorologiques, faites à Paris pendant dix ans, depuis ler Janvier 1763, jusqu'au 31 Decembre 1772 par M. Messier, de l'Académie royale des sciences, avec un Methode pour analyser ces sortes d'Observations," 1774, 427-502.

11. M.Bigot de Morogues, "Mémoires sur la corruption de l'air dans les Vaisseaux," Memoires, Volume I (1750), 394-95.

12.Ibid., 405.

13.M. Boucher, "Observations faites à Lille en Flandre, sur les différents températures de l'air; sur l'état de la campagne des environs & de ses productions, & sur les maladies épidémiques qui ont règné dans la Province, depuis la fin de l'hiver de 1752 jusqu'au printemps de l'année 1753," Memoires, Vol. V. (1768), 441-43.

14."Extraits d'une Lettre écrite à M. l'Abbé Nollet, le 20 Juillet 1765, par M. DE CAIRE, chevalier de l'Ordre de Sant-Louis, & Capitaine au Corps du Genie, sur la cause du Froid en Canada," Mémoires Vol. VII (1776), 541.

15.Ibid., 542-43.

16.Ibid., 544-45.

17.Ibid., 551.

18.Dictionary of Scientific Biography Vol. X ed. Charles C. Gillispie (New York: Charles Scribner's Sons, 1974), 33-34; for the influence of de Mairan's treatise on Buffon and his theory of the earth's internal heat consult Otis E. Fellows and Stephen F.Milliken, Buffon (New York: Twayne Publishers, Inc., 1972), 76-81.

19.Fellows and Milliken, Buffon, 76-77.

20.M. De Mairan, "Sur les causes générale du froid en hiver & du chaud en été," Mémoires Vol. IV (1765), 2-4.

21.Robert Shackleton, Montesquieu: A Critical Biography (Oxford: Oxford University Press, 1961), 308-09.

22.Ibid., 9.

23.Ibid., 11-13.

24.Mairan, "Sur les causes générale du froid en hiver & du chaud en l'été," 11-13; Fellows and Milliken, Buffon, 76-77.

25.Ira O. Wade, The Structure and Form of the French Enlightenment: Volume II, "Esprit Révolutionnaire" (Princeton: Princeton University Press, 1977), 180.

26. The best English biography of Diderot is by Arthur M. Wilson, Diderot (New York: Oxofrd University Press, 1972); and for Jean d'Alembert consult Thomas L. Hankins, Jean d'Alembert: Science and the Enlightenment (Oxford: Clarendon Press, 1970).

27.Wade, The Structue and Form of the French Enlightenment, Vol. II, 182-83.

28.Wilson, Diderot, 73-74.

29.Denis Diderot, ed., Encyclopédie, ou dictionnaire raisonné des sciences, des arts, et des métiers. par une Société de gens de lettres Volume III (1753), 532.

30.Ibid., 533.

31.Ibid.

32.Ibid., 533-34.

33.One glances Diderot desire to do battle with religion scattered throughout the Encyclopédie. The reference to monkery in this context is revealing because Montesquieu did not dwell long on it in his work.

34.Ibid.

35.Ibid.

36.Ibid.

37.For the question of when the human sciences definitely formed themselves, see Michel Foucault, The Order of Things: An Archeology of the Human Sciences (New York: Vantage Books, 1973); an excellent corrective to Foucault's "ironclad definition of the human sciences" is found in Keith M. Baker, Condorcet: From Natural Philosophy to Social Mathematics (Chicago: The University of Chicago Press, 1974\5); a more traditional approach to the human sciences can be found in Frank E. Manuel, The Prophets of Paris (Cambridge: Harvard University Press, 1962); an approach to the birth of the human sciences in medical perspective is that of Martin S. Staum, Cabanis: Enlightenment and Medical Philosophy in the French Revolution (Princeton: Princeton University Press, 1980).

38.George Stocking Jr. Race, Culture, Evolution: Essays in the History of Anthropology (New York: Free Press, 1968; reprint ed. Chicago: The University of Chicago Press, 1982), 18-21; Claude Blanckaert, "On the Origins of French Ethnology: William Edwards and the Doctrine of Race," in Bones, Bodies, Behavior: Essays on Biological Anthropology ed. George Stocking Jr. History of Anthropology Series Volume 5 (Madison: Madison University Press, 1988), 18-55; Elizabeth A. Williams, "The Science of Man: Anthropological Thought and Institutions in Nineteenth-Century France," Ph.D. dissertation (Indiana University, 1983), 30.

39.Williams, "Anthropological Thought and Institutions," 30-32.

40.Ibid; see too Blanckaert, "On the Origins of French Ethnology."

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