

The Century Social Science Series

# CULTURAL CHANGE

BY

F. STUART CHAPIN

PROFESSOR OF SOCIOLOGY, UNIVERSITY OF MINNESOTA



THE CENTURY CO.  
NEW YORK & LONDON

TO MY WIFE  
EULA PICKARD CHAPIN

## PREFACE

It is customary to review the contents of a book in the preface. In this book a survey and summary is presented in the final chapter.

The author is indebted to his colleagues and graduate students at the University of Minnesota for constructive and critical discussions of many of the hypotheses presented. The author is particularly indebted to his colleague Mr. Harold R. Hosea for assistance in reading proof and for preparation of the indexes. To the editor of the series, Professor Edward A. Ross, the author is indebted for many helpful suggestions. To his wife he is indebted for assistance in preparing the manuscript. Acknowledgments are due the editors of the *American Journal of Sociology*, *Social Forces*, *Sociology and Social Research*, and the *Scientific Monthly*, for permission to reproduce materials previously published in articles.

For inadvertent errors the author alone is responsible. It is obviously impossible for the author to be a specialist in all the fields covered by this book. Consequently, he must ask the indulgence of those who have special knowledge for any errors of fact or mistake that may have arisen through references to other historical authorities—errors which have escaped his diligent effort at accurate presentation.

F. STUART CHAPIN

MINNEAPOLIS, MINNESOTA

# CONTENTS

## PART I

### THE PERSPECTIVE OF MAN'S PAST

CHAPTER		PAGE
I	THE ANTIQUITY OF MAN . . . . .	3
	1. The Origin of Man . . . . .	5
	2. The Stratigraphic Method for the Study of Pre- history . . . . .	9
	3. Glacial and Interglacial Stages . . . . .	11
	4. Fossil Men . . . . .	13
II	THE ACCUMULATION OF CULTURE . . . . .	21
	1. Evolution of Implements . . . . .	22
	2. Language . . . . .	30
	3. Social Institutions . . . . .	44
	4. Summary: The Accumulation of Culture . . . . .	50

## PART II

### HISTORY REPEATS ITSELF

III	CULTURE AND RECORDED HISTORY . . . . .	55
IV	THE CIVILIZATION OF GREECE: A STUDY IN CULTURAL CHANGE . . . . .	59
	1. The Land and the People . . . . .	59
	Food resources	
	War and colonization	
	2. Social Conditions and the Class Struggle . . . . .	66
	Money economy and social relations	
	Food, money, and debt	
	Slavery in Greece	
	Imported grain	
	Social unrest and the class struggle	
	The social reformers	
	3. Industry and Social Economy . . . . .	78
	The ceramic factory	
	The organization of labor	

Charity and social economy  
The seeds of decline

V THE CIVILIZATION OF ROME: A STUDY IN CULTURAL  
CHANGE . . . . .

90

1. The Land and Militarism . . . . .

90

The common cause and federation  
Militarism and agriculture

2. The Class Struggle . . . . .

94

Debt-slavery and social revolution  
The writing of the laws  
Public land and agrarian reforms  
Exploitation of the provinces  
The growth of plutocracy  
Demoralization of yeoman farmers

3. Agrarian Conditions and the Problem of the City 104

Agrarian reform of Tiberius Gracchus  
Social legislation of Gaius Gracchus  
The corn law of Gaius Gracchus  
Constructive measures  
The Gracchian reforms in perspective  
Public relief in Rome  
Private charity and benevolence

4. The Institution of Slavery . . . . .

127

Treatment of slaves  
The decline of the slave system  
Serfdom

5. The Organization of Labor . . . . .

138

Ancient and modern organizations of labor  
The obstacles to industrial progress

VI SOME CHANGES IN THE MATERIAL CULTURE OF MEDIEVAL

ENGLAND . . . . .

147

1. Commerce and the Towns . . . . .

147

The crusades  
The gild merchant

2. Handicraft Industry and the Craft-Gilds . . .

151

The handicraft system  
Internal organization of the craft-gilds  
Activities of the craft-gilds

3. The Decline of the Craft-Gilds . . . . .

159

Internal demoralization  
External influences

# CONTENTS

xi

## CHAPTER

## PAGE

4. The Rise of the Domestic System . . . . .	166
The spread of industry to the country	
The spread of woolen manufacture	
5. The Agricultural Revolution . . . . .	171
Sheep-raising and enclosures for pasturage	
Improvements in agriculture	
The new period of enclosures and the agrarian revolution	
The decay of yeomanry	
Agricultural machinery	
6. Medieval Charity and the English Poor Law . . .	184
Medieval charity	
The period of repression	
The poor-law of Elizabeth	
The reform of the poor-law	

## PART III

### THE INTERPRETATION OF CULTURAL CHANGE

VII Do CULTURAL CHANGES OCCUR IN CYCLES? . . . .	201
1. The Character of Cultural Change . . . . .	203
2. A Theory of Synchronous Culture Cycles . . . .	207
3. Cycles of a Periodic Character . . . . .	214
VIII IS THERE A SOCIETAL REACTION PATTERN? . . . .	224
1. The Pattern Concept and the Group Concept . . .	224
2. The Hypothesis of Societal Reaction Pattern . . .	226
3. The Hypothesis of Societal Reaction Pattern Ap- plied to the Study of Poor-Relief Legislation . . .	229
4. Massachusetts . . . . .	231
5. Minnesota . . . . .	233
6. Other Examples of the Principle and Summary . .	235
IX POWER MACHINERY AND CULTURAL CHANGE . . . .	238
1. The Industrial Revolution . . . . .	239
The inadequacy of domestic manufacture	
Mechanical inventions and machine power	
The factory system	
Social and economic effects of the factory system	
Factory legislation	
Some wider aspects of the industrial revolution	
Agricultural machinery	

2. The Revolution in Communication . . . . .	279
The great inventions in communication	
The expressiveness of the new communication	
Swiftmess in overcoming space	
The diffusion of intelligence	
Permanence of record—The overcoming of time	
Social effects of the new communication	
The subtler effects of communication by machines	
X THE CULTURAL LAG IN THE FAMILY . . . . .	312

## PART IV

## THE MEASUREMENT OF CULTURAL CHANGE

XI THE INVENTION OF CULTURAL TRAITS: POLITICAL INVENTIONS . . . . .	333
1. Invention of the Automobile . . . . .	334
2. Invention of the Commission Form of Government	337
3. The City Manager Plan . . . . .	340
4. The Social Principles of Invention . . . . .	341
XII THE GROWTH OF SOCIAL INSTITUTIONS BY THE ACCUMULATION OF CULTURE TRAITS . . . . .	357
1. Additions to Culture by Invention . . . . .	357
2. The Growth of Social Institutions . . . . .	361
3. The Growth of the Commission Form of Government and the City Manager Plan . . . . .	369
4. Problems in the Measurement of Institutional Growth . . . . .	376
XIII SELECTION AND SCIENCE . . . . .	385
1. Examples of Social and Societal Selection: Chiefly Drawn from Pre-literate Society . . . . .	387
2. Selection and Scientific Method . . . . .	402
Examples of symbolic substitution	
The method of scientific induction	
Difficulties in the use of the scientific method	
Ways in which these difficulties have been partially met and overcome	
Relation of these methods of social research to the so-called scientific method	

# CONTENTS

xiii

CHAPTER

PAGE

Organized efforts to study social phenomena in  
a scientific manner

XIV	SUMMARY OF THE PROBLEMS AND METHODS OF MEASURE- MENT OF CULTURAL CHANGE . . . . .	419
	1. Summary . . . . .	419
	2. Concepts Auxiliary to the Concept of Cultural Change . . . . .	425
	INDEX . . . . .	439

## PART I

THE PERSPECTIVE OF MAN'S PAST

“Men learn from history that  
men never learn from history”

# CULTURAL CHANGE

## CHAPTER I

### THE ANTIQUITY OF MAN

A ROMAN ILIUM with a marble temple to Athena stands upon a hillock not far from the seacoast of western Asia Minor. Learned archæologists had passed it by. It remained for Schliemann, with his firm belief that the myth and tradition of ancient Troy held a large kernel of truth, to begin digging there in 1870. He was certain that Troy once stood upon this site because it fitted Homer's description, and sure enough, his faith was justified, for excavation disclosed nine successive settlements. Just beneath the Roman buildings there lay the remains of two Hellenic villages which flourished between 1000 B. C. and the Christian era. As the work progressed, the ruins of the whole series of nine settlements, built one above another, were unearthed. Lowest of all was a rude village, probably inhabited about 3500 B. C. and merging into the stone age. The sixth city from the bottom of the series is thought to have been Homer's Troy, which flourished about 1500 to 1000 B. C. The mighty circuit wall of this city was built of massive ashlar masonry and had imposing towers. After his discovery of the site of Troy at Hissarlik, Schliemann went to the mainland of Greece and excavated Tiryns and Mycenae in Argolia, where he found evidences of a civilization contemporary with that at Troy.<sup>1</sup>

On the side of a high hill on the northern slopes of the

<sup>1</sup> Schuchhart, *Schliemann's Excavations*, ch. 1; Hawes, *Crete, The Forerunner of Greece*, introd.

Cantabrian mountains in the province of Santander, northern Spain, there is a great grotto which opens into a cave of magnificent dimensions. Since the year 1908, the archæologists Breuil and Obermaier have found positive evidence of human habitation in thirteen ascending levels over a period estimated at the present time as not less than fifty thousand years! In this grotto of Castillo the rough hunters of the early stone age found shelter. Tribe after tribe successively repaired to and abandoned the site. On the floor of the grotto, successive accumulations of debris, fire-stones, bones, and innumerable flint and stone implements, bear witness to human habitation. Cave loam and great blocks of stone, falling over the entrance of the cavern and mingled with the debris of human occupation, reach a height of forty-five feet, so that later inhabitants used only the entrance to the cavern or were even crowded under the very roof of the grotto at the sides. Osborn says, "This station . . . is a monumental volume of prehistory, read and interpreted by the archæologists almost as clearly as if the whole record were in writing."<sup>2</sup>

What a different view of man's antiquity one gets from the site of Troy and the cave of Castillo! The former takes us back a scant five thousand years. The latter takes us back fifty thousand years! The perspective of one is ten times that of the other. Says Robinson in commenting on the significance of recent archæological and anthropological discoveries, "From this point of view the historian's gaze, instead of sweeping back into remote ages when the earth was young, seems now to be confined to his own epoch. Rameses the Great, Tiglath-Pileser, and Solomon appear practically coeval with Cæsar, Constantine, Charlemagne, St. Louis, Charles V, and Victoria; Bacon, Newton, and Darwin are but the younger contemporaries of Thales, Plato and Aristotle."<sup>3</sup>

<sup>2</sup> *Men of the Old Stone Age*, 1923 ed., p. 165.

<sup>3</sup> *History*, p. 22.

Just as a small and comprehensible solar system has expanded under the magic touch of modern science into the stupendous magnitudes of the sidereal universe, so the history of mankind begins to take on a vastness and a majesty of sweep hitherto undreamed. Let us then dig deeper than Castillo.

### 1. THE ORIGIN OF MAN

Since naturalists trace the origin of different forms of animal life to adaptive modification and descent, it is only going one step further to apply the same reasoning to the human species and to account for man as descended from some lower animal form now extinct. Darwin advanced this theory in his *Descent of Man*. Since Darwin's day much evidence has been gathered to support the doctrine of descent. The evidence of evolution is now based upon the discoveries of the explorer, the paleontologist, the anatomist, the embryologist, and the physiologist. Natural scientists regard this body of testimony as constituting a confirmation of the theory of evolution. For certain forms of life it is, indeed, quite conclusive.<sup>4</sup> We may now concern ourselves with a brief examination of the chief evidences for the doctrine that man is descended, in common with other animals now living, from some lower and extinct form.

The success of any demonstration that man is related by descent to some lower creature depends largely upon our ability to reconstruct the series of related forms. When the doctrine of the descent of man was first advanced, superficial and popular writers immediately jumped at the conclusion that naturalists believed that man was descended from the "monkey." This, of course, is quite absurd, as obviously man could not be descended from a form of life now living. The ape and the members of the monkey family, together with man, are probably descended

<sup>4</sup> But this is a matter that the reader can look up for himself in the many books now available upon the subject.

from some generalized apelike form long since perished from the earth. They may have a common ancestral stock: one is not descended from the other.

The human species, or Hominidæ, is not descended from the gorilla or the chimpanzee, but the "ascent of the Hominidæ is in an independent line from some long since extinct generalized form, from which the other branches also spring in independent lines. All have some features in common, while each presents some special characters. The points of resemblance between the Hominidæ and the Simiidæ are far more numerous than between the Hominidæ and any other group."<sup>5</sup> Keane infers from this that the divergence of the higher groups took place in the sequence indicated in the following classification. For this reason the study of man from the physical side is confined to his relation to the higher apes.<sup>6</sup>

It has been customary in modern zoölogical classification to detach from the class mammals, the large and dispersed group of apes and half-apes (Lemurs) to constitute the independent order of *primates*, so named by Linné. Systematists divide the order into two sub-orders, *lemuroidea* and *anthropoidea*, and subdivide the *anthropoidea*, the manlike forms, into five families—*hapalidæ*, *cebida*, *cercopithecida*, *simiida*, and *hominida* (human species).<sup>7</sup> Keith<sup>8</sup> suggests a somewhat different order as shown in Figure 1.

The reason for asserting that men are primates and are closely related to the Simiidæ is that, part for part, the skeletons, pelvis, ribs, hands, feet, spinal columns, teeth, and bones of the skull are the same in all fundamental regards. In all essential features the sets of bone parts are closely similar.<sup>9</sup> Now if we turn to structures other than

<sup>5</sup> Keane, A. H., *Ethnology*, 1896, p. 19.

<sup>6</sup> *Ibid.*, p. 20.

<sup>7</sup> *Ibid.*, p. 17.

<sup>8</sup> Keith, A., *The Antiquity of Man*, 1916 ed.

<sup>9</sup> Romanes, G. J., *Darwin and after Darwin*, I, The Darwinian Theory, 1901, pp. 74-93; Metcalf, M. M., *Organic Evolution*, 1911, pp. 167-172.

the skeleton, we find there are some remarkable similarities in certain minor details. For example, we think of the hairiness of the apes as distinguishing them rather sharply from man, but in reality the whole of the human body is covered with hair, except the palms of the hands, the soles of the feet, and the backs of certain terminal joints; these

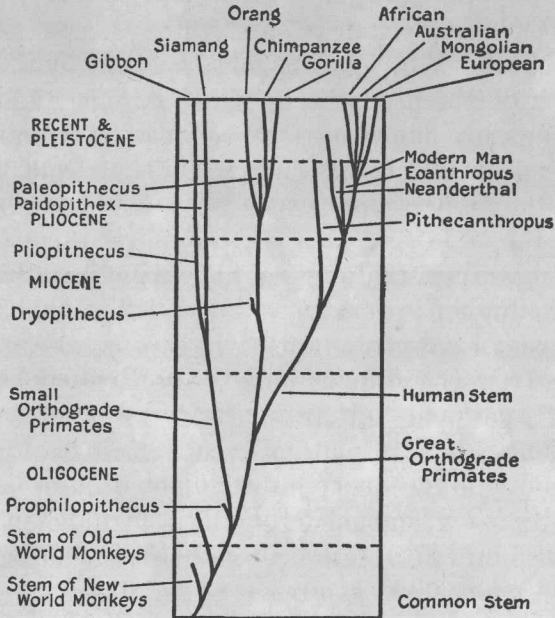


FIGURE 1  
Genealogical Tree of Probable Lines of Descent  
(After Keith)

same portions are hairless in apes. Moreover, the slant of the hair in the several regions of the body, notably on the arms, is the same that we observe in apes. In apes and man there is reminiscence of the ancestral functional tail the coccyx; in fact, a reduced tail. Our ears are slightly, if at all, movable, yet we retain in a vestigial condition the muscles which in some ancestor must have served to move the ears. The vermiform appendix is less developed in

man than in the apes, and is relatively larger in the human foetus than in adult man. Moreover, at the inner angle of the human eye is a fold of tissue which has little or no meaning unless it be explained as a remnant of that third eyelid which in many lower vertebrates, for example, birds, is greatly developed and can be drawn over the whole eyeball inside the outer eyelids. Unless we regard these vestigial structures in man as the traces of an earlier condition through which our ancestors have passed, they have no intelligible meaning.

The study of embryology reveals many points of resemblance between the human embryo, in the earlier stages of its growth, and the embryos of a number of other vertebrates.

There is an epigram among zoölogists that the individual climbs up his own genealogical tree. This bears, of course, only a general interpretation. Yet there is little doubt that the development of the individual is in some measure to be explained as a condensed recapitulation of the presumed racial evolution. In other words, the individual in his embryological development quickly passes through the lower stages and the intermediate forms which it took millions of years for the species to achieve. In this sense, the embryological development of the individual is a recapitulation of the life history of the species.

During the early life of the human infant there are indications of considerable interest. In the development of the child after birth the spinal column has a single curve, as it does in apes and monkeys, instead of the S-shaped curve seen in adult human beings. The baby holds his feet in a position characteristic of the apes. For a few weeks after birth, the child has a remarkably strong finger-grip, recalling the strength with which the young apes grasp the mother's hair, as she climbs with them among the trees. The young baby is able to sustain his own weight by his

hands. When he hangs in this manner he often shows a position of the legs which is strikingly apelike.

There is much more evidence along anatomical and embryological lines, but the character of this evidence has been sufficiently illustrated. The whole structure of man shows that he has arisen by differentiation from lower vertebrates. We do not yet know all the stages through which the human body passed in the process of its evolution, and we do not know many of the details by which his mental traits have risen from the lower condition of intelligence seen in other vertebrates; but the evidence which we do possess presents no serious reason for believing that the method of their evolution has been different in any fundamental regard from the methods by which the minds and bodies of other animals have been developed. In common with other animals "men often fail in the struggle for existence, become submerged and disappear." Natural selection operates among mankind to exterminate the unfit and to preserve the better adapted individuals who transmit to their children the characteristics which gave them advantage. Sexual selection is probably more operative in man than in any other animal species. Among men, especially civilized men, choice in marriage has come to be based less upon the physical attractions which appeal to the lower animals, and more largely upon intellectual and moral attractions. Sexual selection thus serves to increase and perpetuate these highly important characteristics.

## 2. THE STRATIGRAPHIC METHOD FOR THE STUDY OF PREHISTORY

We have now reviewed the evidence which leads us to believe that man is related by distant ancestry to forms of life still extant. This evidence constitutes a presumption which justifies us in the belief that we shall discover the intermediate forms and so partially complete the series of