craftsmen or rulers—until the latters' achievement in technique and organization had so enriched barbarian economies that they too could produce a substantial surplus in their turn.

Karl A. Wittfogel, Adjunct Professor of Chinese History at Columbia University, is known to prehistorians through his study of irrigation and its influence on the nature of complex societies. This article contains a clear and concise statement of this theme, which Wittfogel later developed in a book, *Oriental Despotism* (1957). Though his view that irrigation was the single most important causative factor in the development of complex societies is thought by many archaeologists to be too simplistic and invalid (see, for example, Robert M. Adams' *The Evolution of Urban Society*, 1966), there are some strong defenders of Wittfogel's ideas (see Sanders and Price's *Mesoamerica: The Evolution of a Civilization*, 1968; Price's 1971 article, "Prehispanic Irrigation Agriculture in Nuclear America," *Latin American Research Review*, Vol. VI, No. 3, pp. 3-60, also presents an excellent discussion and restatement of the irrigation hypothesis).

Developmental Aspects of Hydraulic Societies

Karl A. Wittfogel

1. The Great Challenge to a Unilineal Concept of Developments: Hydraulic ("Oriental") Society[1]

An awareness of the developmental peculiarity of irrigation-based "Oriental" society kept the classical economists from advocating simple schemes of unilineal evolution such as were the order of the day during and after the Industrial Revolution. The present efforts of anthropologists to establish multilineal patterns of development are methodologically subtler, and their roots are complex. But it is probably no accident that these new efforts are greatly concerned with the developmental history of "irrigation civilizations" in the New and in the Old World.

Through my work on Chinese history I have long been impressed with the developmental lessons to be learned from a study of agrarian societies based on large-scale and government-directed waterworks. These societies covered more territory, lasted for more years, and shaped more lives than any other stratified agrarian society. In contrast to the stratified agrarian societies of Medieval Europe, they failed, of their own inner forces, to evolve beyond their general pattern. Both their historical significance and their institutional peculiarity make them a productive starting point for a new inquiry into the nature of societal development.

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2. Two Basic Prerequisites and a Few Taxonomic Comments

Such an inquiry requires, first, the postulation of recognizable patterns of societal *structure* ("culture types") and second, the postulation of recognizable patterns of societal *change* ("development"). Both prerequisites have been successfully met by Julian Steward (Steward 1949, p. 2 ff.; *idem* 1953, p. 318 ff. and 321). Accepting the substance of his definitions, I shall, from the standpoint of the institutional historian, comment briefly on the morphology – and taxonomy – of societal types and changes.

a. Societal (culture) types

Societal types are operational units whose essential intellectual, technical, organizational, and social elements, although not necessarily specific in themselves, become specific through their dimension and the institutional setting in which they function. A substantially technological approach, as suggested by Leslie White (White 1949, p. 365, 375 ff., 377, 390), can be very productive in a study of the Industrial Revolution. But it fails to explain the beginnings of industrial capitalism, which at first reorganized rather than re-equipped industrial production. And, on the level of pre-industrial life, it prevents a clear understanding of the institutional processes that separated, not temporarily and accidentally, but structurally and over time, the hydraulic from the non-hydraulic part of the agrarian world.

In a recently published paper, Gordon Childe states that his definition of the Neolithic "stage" rests on economic and not on geologic or technologic criteria (Childe 1953, p. 193). Yet more than in the past, his discussion obscures the crucial socio-political differences behind similarities of material and technology; and also more than in the past, his use of the terms "neolithic revolution" and "urban revolution" obscures the peculiarities of the developmentally decisive hydraulic revolution.[2]

The men who accomplished this revolution often employed the same work tools (hoe, shovel, basket) and the same work materials (soil, stone, wood) as did the rainfall farmers. But by specific organizational means (large-scale cooperation, rigid subordination and centralized leadership) they established societies that differed structurally from societies based on rainfall farming.

The comprehensive use of metal contributed to the further growth of hydraulic societies and non-hydraulic agrarian societies, but it did not bring them into being. And the urban revolution that followed the hydraulic revolution was radically different in its socio-political content from the urban revolution that occurred in the non-hydraulic agrarian world.

Above the level of simple tribal life, and in most cases evolving directly from it, there obviously existed a number of higher pre-industrial civilizations whose diversities can be ascribed only to a limited extent to technological factors: stratified pastoral societies, hydraulic societies, the non-hydraulic and non-feudal agrarian societies of ancient Greece (with *metics* or free peasants as cultivators) and of republican Rome (increasingly employing slave labor in agriculture), the feudal societies of Europe (based on rainfall farming) and of Japan (based on small-scale irrigation); and perhaps some others that are less distinct typologically and less important historically.

b. Developmental patterns

Our reference to the multiple origins of higher agrarian societies indicates that societ development, like societal type, may show substantial and definable diversities. A comparative study of development has to recognize the possibility of single as well as multiple origin, and the possibility of multiple modes of development following upon both types of origin. It has to recognize societal stagnation and change, circular change (resulting in restoration) and permanent change (development proper). It has to recognize that in terms of values, development may be progressive or retrogressive, or ambivalent, its positive and negative values being determined (if not as easily as the 19th century evolutionists thought) by a judicious appraisal of technical, organizational, and social factors, and such basic human assets as freedom of opinion and opportunity for creative expression.

And then there is diversive change – societal transformation brought about, not developmentally, that is, not "spontaneously" and "from within" (cf. Kroeber 1948, p. 241), but by extraneous forces which compel the target society to move in a direction that it would not have taken without external interferences either at the moment of change or in a foreseeable future.

These developmental patterns occur in many combinations. All are pertinent, and some are crucial, for an understanding of the typological and developmental position of hydraulic society.

3. Hydraulic Society: The Over-all Conformation and Some Major Sub-types

a. Hydraulic ("oriental") society and "oriental despotism"

I suggest that the term "hydraulic agriculture" be applied to a system of farming which depends on large-scale and government-directed water control. I suggest that the term "hydraulic society" be applied to agrarian societies in which agro-hydraulic works and other large hydraulic and non-hydraulic constructions, that tend to develop with them, are managed by an inordinately strong government. I suggest that the term "state" be applied to a government that, on the basis of a sufficient surplus, is operated by a substantial number of full-time specialists: civil and military officials. I suggest that the term "hydraulic society" be used interchangeably with "Oriental society" in recognition of the geo-historical fact that the societal order under discussion appeared most significantly and lastingly to the east of those European countries, in which social scientists first tried to define these phenomena. To the best of my knowledge, John Stuart Mill was the first to use the formula "Oriental society" (Mill 1909, p. 20).

Although little effort has been made to clarify the underlying institutional facts, the term "Oriental despotism" has been widely accepted. Following Milukov, we may apply the designation "Oriental despotism" to a state that is stronger than all other forces of society (Milukov 1898, p. 111).

b. Basic institutional aspects of hydraulic society

The extraordinary power of the hydraulic state results from a number of institutional features that interlock and mutually support each other. Among them I consider outstand-

ing the state's constructional, organizational, and acquisitive achievements; its success in keeping private property weak and in keeping the dominant religion attached to itself; and its specific type of ruling class—a monopoly bureaucracy.

The constructional achievements of Oriental despotism include the creation and maintenance of large waterworks for productive and protective purposes (irrigation and flood control) and, under certain conditions, the creation of navigation canals and extended aqueducts for conveying drinking water. Among the non-hydraulic installations that tend to grow with the growth of the various hydraulic installations we find monumental defense works (long walls and fortresses), far-flung roads, "big houses" (palaces, temples), and colossal tombs (pyramids, etc.).

The organizational achievements of Oriental despotism include certain operations inherent in large-scale and planned construction (counting, record-keeping, handling of large numbers of corviable persons), processes of using what has been constructed (management of hydraulic and non-hydraulic installations), and the application of the thus acquired organizational techniques to other operations: to quick communication and intelligence (the state post), and to the maintenance of coordinated and centrally directed armies. Tribal hydraulic communities are superior in food production to most of their non-agricultural neighbors; but the former are at a military disadvantage because of their fixed and, for the most part, small residences. They therefore excel in the defensive arts of war.[3] It is in the larger and state-centered hydraulic societies that integrated and relatively numerous armies provide the means for aggressive warfare and for regional and, eventually, super-regional expansion.

The acquisitive achievements of the hydraulic state include a variety of measures aimed at controlling the population's labor and/or the fruits of its labor. Under simpler conditions, agricultural corvee labor on "public fields" and government-assigned office land prevails; under more complex conditions, the government relies, in part or essentially, on raising taxes in kind and/or in cash. The acquisitive claim tends to affect the whole population; and being imposed from above, it tends to be heavy.

The hydraulic regime's power over the population's property manifests itself not only in its fiscal strength but also in acts of ruthless confiscation and in laws of inheritance which compel the more or less equal division of a deceased person's property among several heirs (usually his sons, but at times also his daughters or other relatives).

Still more consequential is the fact that the one-sided concentration of societal leadership in the government prevents the owners of private property, both mobile and immobile, from organizing independent and politically effective bodies, "corporations" or "estates." This was the case even for the non-office-holding members of the ruling class, the bureaucratic gentry. Only the executive activists were organized, and they were organized politically through the permanent operational centers (office, bureaus) that formed the administrative nuclei of the despotic ("apparatus") state. Jealously defending their monopoly of political organization, on occasion even at the expense of their proprietary interests, these men of the apparatus constituted a monopoly bureaucracy. In contrast to the representatives of so-called "monopoly capitalism", they were eminently successful in maintaining a monopoly of societal leadership (Wittfogel 1953a, p. 97, note 3).

Professional functionaries of the dominant religion often, and particularly under simpler conditions, acted also as government officials. But they never established independent churches that counterbalanced the power of the state, as did the *ecclesia militans* of the European Middle Ages. Throughout the Oriental world, and in a variety of ways, the dominant religion remained attached to the absolutist government which often appointed its priests and usually administered its property.

c. Major sub-types of hydraulic society

These are important aspects of the culture-type, hydraulic society. Their implication for the macro-morphology of development are apparent. They become still more apparent after we have examined the major sub-types of the over-all conformation.

The institutional tissue of hydraulic society differs structurally and definably with regard to hydraulic and managerial "density." It also differs with regard to proprietary "complexity": the quality and dimension of active (productive) private property and private-property-based enterprise.

In Inca society, ancient Egypt, and Mesopotamia the greater part of all arable land seems to have depended on irrigation water provided by government-controlled installations. Hydraulic agriculture prevailed absolutely; and the density of the bureaucratic-managerial apparatus was extreme. Under such conditions we are faced with a "compact" hydraulic society.

Where the hydraulic centers are spread out among large areas of small-scale irrigation and/or rainfall farming, we are faced with a "loose" hydraulic society. A number of territorial states of the Mexican highlands and of early China and India fall into this latter category.

Loose hydraulic societies include regions which lack agro-hydraulic works, but which are subject to the same organizational and acquisitive controls that the despotic state employs in its hydraulic core areas. When such regions, after gaining independence, still preserve Orientally despotic methods of statecraft, or when, under the influence of hydraulic societies, such methods emerge in adjacent countries that practice little or no hydraulic agriculture, then we are faced with a "marginal" hydraulic (Oriental) society.

In some instances, the government of a marginal hydraulic society undertook large non-hydraulic operations (Middle Byzantium, the Lowland Maya, the Liao empire). In other cases, such large non-hydraulic operations were practically lacking (Muscovite Russia). This divergence poses important questions of origin and structure. But it is imperative to realize that, in terms of political, social, and economic relations, all these civilizations definitely belonged to the hydraulic world, while other societies that preserved some elements of Oriental despotism, but represented different socio-cultural patterns, belonged to the "sub-marginal" part of the hydraulic world.

One of the most remarkable examples of a hydraulically sub-marginal civilization is Japan, which, on the basis of small-scale irrigation, evolved a system of social leadership and dependency that was as similar to that of feudal Europe as it was dissimilar to the great hydraulic society of the near-by mainland, China.

Varying density in the hydraulic and managerial spheres involves a varying administrative (bureaucratic) density among those who do the ruling. Varying complexity in the proprietary sphere involves a varying social differentiation among those who are ruled. In primitive (tribal) hydraulic societies, a higher degree of hydraulic density and/or a larger population seems to bring about stronger government control over both land and

water. In hydraulic states, the bulk of all cultivable land is, for the most part, not privately owned but, on the village level, regulated by local officials or semi-officials.

As a rule, substantial private property-based social differences seem to have arisen first from differences in active mobile property—the material foundation of handicraft and trade. Simple hydraulic societies have few independent artisans and merchants. Pharaonic Egypt, until the New Kingdom, and Inca society are cases in point.

Semi-complex hydraulic societies have substantial groups of professional and independent artisans and merchants. Maya and Aztec society, and of course traditional India until the arrival of the British, exhibit this semi-complex pattern.

It seems certain that elements of private landownership were present in many simple and semi-complex hydraulic societies. But prior to the recent processes of disintegration, such ownership under Oriental despotism prevailed in relatively few civilizations (pre-eminent among them: Imperial China). The developments of the 19th and 20th centuries, which in many parts of the Oriental world (India and the Near East) weakened the traditionally strong despotic state and favored the growth of absentee landlordism, must not obscure the fact that, in the long history of hydraulic society, complex conditions of property (that is, the prevalence of mobile *and* immobile private property) were more the exception than the rule.

4. Developmental Aspects of Hydraulic Society

Recently the development of hydraulic society has been analyzed particularly with regard to local origins, regional maturation, and empire-like expansion. And the terms "Formative", "Florescent" ("Classic") and "Empire" (or "Fusion") have been suggested for these phases. Formation, growth, and dimension are indeed vital phenomena. Their institutional meaning will become clearer, if they are examined in the light of our just-defined criteria: managerial density and proprietary complexity.

a. Origins (Formative I and II)

Irrigation societies, in the form of independent village communities, have existed for many centuries in the Pueblo area of North America. But students of the formative phase have neglected them for the study of Chavín-Cupisnique, Salinar, and other cultures which are assumed to have had an incipient ruling class and state. This approach ignores valuable socio-typological information; yet it implies a recognition of the fact that, in the major areas of hydraulic development, primitive hydraulic commonwealths expanded quickly beyond the single-village pattern that the Pueblos exemplify so strikingly (cf. Wittfogel and Goldfrank, 1943).

The radiocarbon data on the ancient Near East seems to indicate that "once food production came into being, the rate of technological (and cultural) acceleration was much more rapid than had been anticipated" (*Radiocarbon Dating*, p. 53). Obviously this thesis is not valid for regions in which limitations of water and soil caused the perpetuation of the single-village community. However, it may well explain why in the Andean zone, in Egypt, and Mesopotamia, the establishment of hydraulic society apparently occurred in two phases (Formative I and Formative II, if you wish), the second either quickly succeeding the first or being almost indistinguishable from it, and with groups larger than a single "local" unit combining for the initial communally-conducted hydraulic effort. Thus the criterion of dimension permits us to recognize, for the formative period of hydraulic socie a single-settlement type (Local I) and a multi-settlement and incipient city-state type (Local II).

In semi-arid settings, such as North China, early rainfall farmers probably practiced irrigation agriculture first along smaller water courses and later in the larger river plains and deltas, while they continued to cultivate and at times increase the extent of their non-hydraulic hinterland. Such a development would make for loose hydraulic societies. The agro-hydraulic conquest of arid regions, which often led to the establishment of compact hydraulic formations, may have been accomplished by representatives of loose hydraulic societies which had received their initial hydraulic experience in a semi-arid setting, or it may have been accomplished by rainfall farmers. The latter form of transition may have occurred in the main in areas in which innundation agriculture was possible. But circumstances permitting, it seems reasonable to assume that there was interaction between early, loose and compact hydraulic societies.

In terms of hydraulic density then, the formation of hydraulic societies probably occurred in several ways. And in all likelihood a variety of leaders (war chiefs, peace chiefs, priests) spear-headed, and benefited from, the hydraulic revolution.

On the eve of this revolution there may have existed various forms of property (clan, private, and communal). But the new development favored government control over specialized handicraft and exchange together with government control over the bulk of all cultivable land.

b. Regional and inter-regional (empire-like) developments

Viewing the hydraulic "region," as juxtaposed to the local "community," as a larger ecological unit that draws its water supply from a whole river system, or a self-contained part of such a system, we find the regional type of hydraulic development correlated with a maximum growth of compact hydraulic societies: witness the city or territorial states of coastal Peru, of ancient Mesopotamia, and pre-Thinite Egypt, and the "kingdom" of Dynastic Egypt. The territorial states of Chou China rarely outgrew their loose hydraulic origins;[4] but they often increased their hydraulic density. The northwestern state of Ch'in, which in 221 B.C. unified "all-under-heaven," eventually comprised two extremely compact and productive hydraulic areas: the Red Basin of Szechuan and central Shensi with its fabulous Chêng-Kuo irrigation system.

The fusion of several hydraulic regions into empire-like conformations occasionally stimulated the creation of interlinking navigation canals, such as the Chinese Grand Canal. But in the sphere of hydraulic agriculture a different trend became dominant. Since the old core areas usually reached the saturation point of their hydraulic growth in the period of regional development, the despotic state, while eager to develop hydraulic enterprises in new areas (where this was possible and rewarding), asserted its imperial power by acquiring, whenever recognized advantage suggested, a maximum of territories with a low hydraulic potential, small-scale irrigation and rainfall farming pure and simple. In consequence the great irrigation empires were usually loose hydraulic societies, and compared with the conditions of regional hydraulic development, the period of inter-regional fusion generally represented a lower coefficient of hydraulic

density.

Proprietary complexity changed in a different way. With growing dimension and inter-regional communication, simple conditions of property tended to yield to semi-complex and eventually, but much more rarely, to complex conditions of property. For obvious reasons, managerially compact regions that disposed over a larger bureaucracy were more reluctant to allow professional handicraft and exchange to fall into the hands of private property and enterprise. In Inca society the hydraulic sponge was so effective that, even under conditions of empire, private-property-based enterprise in handicraft, and particularly in trade, was insignificant.

The Inca case, however, seems to be the exception rather than the rule. In most peacefully interrelated territorial states (cf. Buddhist India and later Chou China), and in the majority of all hydraulic empires, new and substantial industrial and commercial possibilities were opened up. And what may be called the *Law of Diminishing Administrative Returns* induced the rulers to permit a substantial increase in privately operating artisans and merchants. Thus in the period of fusion, semi-complex hydraulic societies replaced in many parts of the world the simple hydraulic societies of the period of regional development.

Semi-complex, not complex societies. The empires and quasi-empires of the Mexican highland, the Near East, and India, and also the marginally hydraulic world of Maya Yucatán favored non-governmental handicraft and commerce; but they did not convert the bulk of the land from regulated to private property. The establishment of private landownership in China (which greatly stimulated the intensity of agriculture) remained, until the recent time of transition, an exceptional case of complex proprietary development as, at the other end of the institutional scale, Inca society remained an exceptional case of simple proprietary development.

c. Institutional growth, stagnation, epigonal attitudes, and conspicuous retrogression

Thus progress from regional to inter-regional and empire like conditions increased man's freedom from government control (some scholars would say exaggeratedly: from "state slavery"). But this development rarely freed the villages from the bonds of official or semi-official regulation; nor was it paralleled by an expansion of hydraulic agriculture.

Worse, there was a tendency for hydraulic stagnation to give way to retrogression. The agro-managerial coefficient shrank *relatively* when Oriental despotism extended its non-hydraulic territory, while its hydraulically cultivated territory remained unchanged. The agro-managerial coefficient shrank *absolutely*, when the amount of hydraulically cultivated land decreased. This happened for internal reasons, when indigenous rulers paid less attention to maintaining agro-managerial standards than to invoking new methods of fiscal exploitation. This happened for external reasons, when hydraulically unconcerned "barbarians" placed themselves as conquerors over a hydraulic society. In the first case, retrogression might be combatted at intervals. In the second case, retrogression might lower the hydraulic effectiveness for long periods. This happened on a gigantic scale in the Old World, when, in the middle of the first millennium A.D. and in consequence of a great revolution in cavalry warfare (Wittfogel and Feng 1949, p. 505 ff.), a net of Orientally despotic conquest societies spread over the Near East, India, and China.

The relations between maturation, stagnation, and retrogression are not easily defined. But a few major trends may be tentatively suggested.[5] The growth in the magnitude of a socio-cultural unit does not necessarily involve a corresponding institutional and cultural growth. Loose interaction between numerous independent units proves more stimulating than island- or oasis-like isolation. It also proves more stimulating than imperial fusion, which tends to give the initiative for experiment and change to a single center. This probably accounts for the fact that the foremost representatives of Oriental civilization generally achieved the peak of their creativeness when they were part of a cluster of loosely related territorial states.

Practically all great Chinese ideas on the "way" *(tao)*, on society, government, human relations, warfare, and historiography crystallized during the classical period of the territorial states and at the beginning of the imperial period. The establishment of the examination system and the psychologically slanted reformulation of Confucianism followed the reunification of the empire, the transfer of the economic center of gravity to the Yangtze Valley, and the building of an artificial Nile, the Grand Canal. Other significant changes occurred during later periods of imperial China in the field of the drama and the popular novel; but they were largely due to a new influence, the complete subjugation of China by two "barbarian" conquest dynasties. And none of them shook the Confucian foundation of Chinese thought.

The climax of creative expression in India is similarly located. Hindu religion, statecraft, law, and family patterns originated and reached their "classical" maturity either when India was a network of independent states or during the early phase of imperial unification.

The Arab-dominated conquest societies of the Near East began on an empire-like level. But here again most of the great ideas concerned with law, statecraft, and man's fate were formulated, not at the close, but during the first and the early middle period of Islamic society.

Within a given framework, creative change does not continue indefinitely. When the possibilities for development and differentiation have in great part been realized, the creative process tends to slow down. Maturation becomes stagnation. And given time, stagnation results in stereotyped repetition (epigonism) or outright retrogression. Conquest and territorial expansion favor acculturation. But the ensuing changes do not seriously alter the existing pattern of society and culture. They will be of minor consequence; and eventually they also will yield to stagnation, epigonism, and retrogression.

The trend toward epigonism and retrogression may merge and, in the Oriental conquest societies of the Old World it did merge—with a trend toward reduced hydraulic intensity and increased personal restriction. In terms of managerial action, personal freedom, and cultural creativeness, most hydraulic societies of the late "Empire" period probably operated on a level lower than that reached during the days of regional and early "Empire" florescense.

5. Hydraulic Societies that Lose their Institutional Identity

Under the shadow of the hydraulic state there arose no independent force strong enough to transform the agrarian order into an industrial society. Certain hydraulic societies evolved into non-hydraulic agrarian societies; but generally they did so in conse

quence of external aggression and conquest. They experienced a diversive rather than a developmental change. And recently many hydraulic societies have begun to lose their institutional balance, because they were shaken fundamentally by the imperialist, and non-imperialist, impact of modern industrial society. In a specific sense, they are hydraulic societies in transition.

a. Diversive changes

In the Mediterranean area diversive changes have expanded and reduced the hydraulic world since the time of Crete and Mycenae. This process was at work, when Greek influence in Western Asia rose and fell, when the Hellenistically despotic state of Western Rome collapsed under the attacks of non-Oriental barbarians, when the feudal kings of Castille and Aragon destroyed the Oriental despotism of Moorish Spain, and when the crusading representatives of feudal Europe paralyzed Byzantium.

b. Hydraulic society in transition

No comparative study of development in the hydraulic world may overlook the facts and patterns of these (and similarly structured) diversive changes. Nor may it overlook the developmental processes that recently have placed hydraulic society in its entirety in a state of transition. Marx, who, with significant inconsistencies (Wittfogel 1953, p. 351 ff.) maintained the Asiatic concept of the classical economists, was intrigued by the effect of British rule on "Asiatic society." Marx held no brief for British imperialism; he called its behavior in India "swinish." But he found that, by laying in India the foundations of a private-property-based modern society, the British accomplished "the only *social* revolution ever heard of in Asia" (Marx 1853).

Students of the developmental peculiarities of hydraulic society are uniquely prepared to explain why Japan, which was never hydraulic, evolved with relative ease into a modern industrial society. They are uniquely prepared to study the changes that, under direct or indirect Western influence, occurred during the 19th and early 20th centuries in India, Turkey, and Russia. They are uniquely prepared also to answer the question raised, in 1906, in a fateful discussion between the two top-ranking Russian Marxists, Plekhanov and Lenin, as to whether a new Russian revolution, irresponsibly handled might not lead to an "Asiatic restoration"—that is, to the restoration of Oriental despotism. The relevance of this question for the evaluation of contemporary Russia and China is evident.

By conscientiously and objectively studying the structure and the development of Oriental society, we may once again prove with new answers and new questions the scholarly (and the human) value of the social sciences which we serve.

Notes

[1]For a fuller presentation of the facts and problems discussed here, see my forthcoming book, *Oriental Society and Oriental Despotism*.

[2]In his earlier writings Childe stressed emphatically the ecological and organizational peculiarities in irrigation-based "Oriental" societies. He noted the pioneer position of these societies in the "second" neolithic revolution; and he took pains to distinguish the Oriental Bronze Age from the Bronze Age of temperate Europe (see Childe 1948, p. 105, 109, 128 ff., 140 ff.; *idem* 1946, p. 62 ff., 76, 161, 182, 198, 272). In his more recent writings these distinctions become less meaningful (see Childe 1951 *passim* [based on lectures given in 1947/8]); and in his paper *Anthropology Today* (cf. Childe 1953, p. 208) they all but disappear.

[3]For a discussion of the elaborate defence measures taken by the Pueblo Indians and the Chagga, see Wittfogel, OS, chapter II.

[4]Renewed examination of the issue has convinced me that early historical (pre-Chou and Chou) China constituted not a hydraulically tainted feudal society, but a hydraulic society proper. The climate and the lay of the land made comprehensive hydraulic enterprises a basic prerequisite for permanent settlement and agricultural prosperity in the cradle of Chinese civilization, the river basins and plains of North China. Significantly, during the Chou period the rulers of the territorial states assigned land not to vassals who rendered limited and conditional services, but to officials who were expected to serve without limitation and unconditionally. Thus these lands were not fiefs, but office lands, a type of land-holding that is not at all infrequent under Oriental despotism.

[5]From this point to the end of this sub-section, see Wittfogel, OS, chapter X, D 1, a and b.

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