

suspended between the old and new statuses; and rites of incorporation, symbolizing the achievement of the new status. A Brahman youth's ritual bath before initiation as a novice is an example of a rite of separation, a girl's seclusion during her first menses of a rite of transition, and sexual hospitality to a visiting stranger of a rite of incorporation.

In support of his thesis, van Gennep quotes a great variety of material, much of it unreliable, from peoples all over the world. But despite his uncertain scholarship, his generally "botanizing" approach to the categorization of religious practices, and his total failure to deal with the social and cultural contexts from which his examples are drawn, van Gennep offers, in his concept of an underlying pattern of withdrawal, isolation, and return which is common to all passage rituals, a valuable theoretical insight into the dynamics of religion in both psychological and sociological terms.

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**Heavenly Clockwork.** The great astronomical clocks of medieval China. Joseph Needham, Wang Ling, and Derek J. de Solla Price. Cambridge University Press, New York, 1960. xv + 254 pp. Illus. \$12.50.

This is a history, but not a mere chronological account, of the clock in China, from the time of the later Han dynasty (about A.D. 120) through the beginning of the Ming dynasty (about A.D. 1600). The volume, organized in a way which is unusually revealing of the processes by which the authors' research was accomplished, occasionally gives the reader a feeling almost of participating in the research. Beginning with the elaborate astronomical clock of Su Sung (1086-94), which has been mentioned but not fully analyzed in earlier literature, the authors have searched the dynastic histories and encyclopedias, with which Chinese literature abounds, in an endeavor to determine, first, the earliest evidence of such a device in Chinese history and, second, the reasons for the regression in Chinese horology which made it possible for the Chinese to be so impressed with the clocks brought in by the Jesuits in the 16th century. Their search for an an-

swer to the first question leads to Chang Hêng (fl. 120-140), a well-known mathematician and astronomer who is already recognized as an inventor (probably the first) of an instrument for indicating earthquakes. It would appear that the Chinese version of that critical element of the clock, the escapement, was a device demonstrably related to the water clock and, hence, plausibly descended from that older device.

The quest for an answer to the second question is necessitated by the evident impression on the part of both the Jesuits and "the majority of Chinese" that the clock was a new thing in China at the end of the 16th century. The authors conclude, provisionally, that clock-making had not actually ceased, but had been reduced to "a minor industry" 250 years prior to the arrival of the Jesuits, a victim of the attempt of the Ming to efface certain luxuries of the previous dynasty, among them the clocks (page 141). As is acknowledged, this conclusion leaves for further research the actual condition of the "minor industry" when the Jesuits came.

Perhaps the most challenging aspect of this book is its suggestivity concerning the rationale of horology. It appears that Chinese clocks, until late in the 13th century, were principally concerned with the representation of astronomical motions and not with the visual indication of time. The authors suggest a connection between the invention of the "powered celestial globe as a calendrical computer" and the determination of the imperial succession by state astrology (pages 172-73). They conclude with a brief attempt to relate the story they have unfolded to horology in India and the West.

I have mentioned only a few of many intriguing points raised in this remarkable book, which I presume to be a by-product of the first two authors' *History of Science and Civilization in China*. Much of the citation in the present work is to the unpublished volume 4 of that *History*. But it is nonetheless an impressively self-contained piece of scholarship, admirably illustrated and written in a sprightly style that overcomes the drag of an inevitably cumbersome, critical apparatus. Scholarship and elegance of presentation are not often more successfully combined.

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**The Nation's Children.** vol. 1, *The Family and Social Change*. 252 pp. vol. 2, *Development and Education*. 242 pp. vol. 3, *Problems and Prospects*. 242 pp. Eli Ginzberg, Ed. Columbia University Press, New York, 1960. Paper, 3 vols. for \$6.50; cloth, \$4.50 each.

In discussing plans for the 1960 golden anniversary White House Conference for Children and Youth, the Conference Steering Committee faced the need for materials to be presented to the delegates to serve as a basis for the discussion that would be "charting directions for the next decade." The feasibility of stimulating research in the multiple areas affecting children and youth in time for use by the conference was rejected; instead, it was decided that the Committee on Studies should invite distinguished experts in a variety of fields to write essays on subjects of current concern about youth today. The essays were to be written for the educated layman, "to strive for balance and eschew extremes."

The collected articles have been published in three volumes, edited by Eli Ginzberg, chairman of the Committee on Studies of the White House Conference. The result is a most interesting panorama of the nation's problems and tasks in regard to our young people.

The first volume deals with some of the social changes affecting family life, such as the new suburbia, urbanization, prosperity, health gains, population increase, changing family role definitions, cultural shifts, increased leisure, and developments in the religious field. The contributors show how these changes influence the family and affect the way youth today see their world. For instance, financial security is shown as creating a sense that one's personal future is safe; this leads to the feeling that one does not have to delay marriage to pursue a career. This picture is also affected by the reduced health hazards in childhood illnesses. With these new forces at work, marital and parental roles and functions are changing. The interplay of these factors is graphically described by the specialists who contributed to this volume.

*Development and Education*, the second volume, focuses on "the analysis of the gap between our aspirations and our accomplishments in preparing young people for life from three vantage points: how the gap came to be, what can be done to narrow it, and the