Case histories showing how this could be accomplished were presented at the meeting by Dr. J. M. Nielson and Dr. George N. Thompson of Los Angeles County General Hospital.

Immediate recovery followed removal of the frustration in some cases. In one instance, the illness could be brought on again by simply reintroducing the frustrating situation.

Frustration does not always lead to schizophrenia, nor is the illness always caused by frustration, the Los Angeles physicians pointed out. They explained how frustration may lead to schizophrenia somewhat as follows:

A state of anxiety results when a person, once frustrated, cannot accept defeat but continues to strive for the unattainable goal. Emotional depression, on the other hand, results when frustration is accepted as final, yet the desire for the unattainable goal continues without active pursuit of it. When the depression comes to an end, they said, various forms of reaction may appear, depending on the make-up of the individual.

These reactions include an attack, either verbal or physical, on the object or situation causing the frustration; sublimation of one's ambitions; or a psychotic response, that is, outright mental sickness. Only a relatively small number, the doctors said, will develop a psychotic reaction, resembling schizophrenia. If the frustration is then overcome by direct assault or by sublimation before it becomes thoroughly established, complete recovery can be achieved. If success is impossible a genuine schizophrenia may develop.

Children suffering from the very severe mental sickness called schizophrenia actually have a better chance of getting well when treated at the doctor's office than when sent to a mental hospital, Dr. J. Louise Despert of New York Hospital finds.

Although the prospect of complete recovery remains doubtful, results of this treatment which allows the child to live at home with his family have been encouraging.

Dr. Despert has tried the treatment on seven children ranging in age from three to seven years.

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SOCIOLOGY

Culture Theory Proposed

➤ A MODERNIZED theory of culture which embraces nearly all known civilization since the beginning of recorded time, excepting the Americas before Columbus, has been postulated by Prof. A. L. Kroeber, anthropologist of the University of California.

Prof. Kroeber models his concept after the Greek theory of culture, called Oikoumene, meaning "the inhabited," which was actually the Mediterranean basin. This was all the inhabited world known to the Greeks.

The concept proposed by Prof. Kroeber holds that the known cultures of Europe and Asia form the parts of a whole pattern. These cultures have all drawn upon what Prof. Kroeber calls the root-stock of all higher civilizations.

Thus, for example, sculpture is a cultural expression of a wide range of higher civilizations, in different periods of time in widely separated geographical areas. While this art was developed in different forms and to different degrees of perfection, sculpture is a part of the root-stock of higher civilizations, and is unlimited by time or geographical considerations. It was borrowed by the exchange of ideas for differential development.

Prof. Kroeber pointed out that the interrelations of the different known cultures are such that it is extremely difficult and in many cases impossible to determine when or where a cultural expression such as the domestication of animals and plants or the development of games of mental skill took place.

The anthropologist said that his concept would involve a shifting of the Greek "Oikoumene," meaning from "range of mankind" to "range of man's most developed cultures," thus giving a significant designation to an interwoven set of happenings.

Prof. Kroeber, speaking recently as Huxley Medalist before the Royal Anthropological Institute of Great Britain and Ireland, meeting in London, England, excluded the pre-Columbian Americas from his "Oikoumene" because there is no definite interrelationship between the cultures of the Americas and Eurasia during this time.

Prof. Kroeber's Oikoumene encompasses not the totality of the culture of all humanity at all periods and all places, but "as large a sector of it as the millennially interrelated higher civilizations in the connected mainland masses of the eastern hemisphere."

"The speed of diffusibility of culture content is so great under optimum conditions," Prof. Kroeber said, "that the period of half-a-dozen millenia which we have been considering would have sufficed for particular items—say something like smoking, or coffee—to have spread around the planet again and again and again.

"What counts for total comprehension of the story of man's doings, however, is not these flashing meteoric bits, but the concatenated masses of culture and the interrelations of these. . . . .

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"It is in connection with the understanding of major drifts such as these that the concept is here submitted of an Oikoumene consisting of a specific, preponderant, interwoven, definable mass of culture charged with a modern significance additional to the original socio-geographical designation in which culture reference was at best only implicit."

Of his reasons for excluding the Americas from his "Oikoumene," Prof. Kroeber said: "I would not deny that first and last a great many seeds of culture passed, by land or by sea, from Asia to this or that part of the Americas, and that some proportion of them germinated, or a least stimulated new growths on the soil. Yet the story of major civilizational growth in America . . . gives no indication of integrating with the corresponding story in Eurasia. The two are not, so far as we can yet see, parts of a single plot."

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RADIO

Loran Guides Bombs

Radio navigation system can be used in the next war to guide bomb-carrying pilotless aircraft to the target thousands of miles away.

➤ THOUSANDS of bomb-carrying pilotless aircraft in the next war could be rained upon an enemy nation thousands of miles away through use of the radio navigation system called loran that was developed and used during the war.

Dr. J. A. Pierce, now at Harvard, who participated in the loran development at the MIT radiation laboratory, describes in a communication to the Institute of Radio Engineers a method that would allow all-weather flying bombs to be launched from hundreds of points and guided to their targets by an invisible net of precisely timed signals spread over the area attacked (*See* SNL, Feb. 9, 1946).

"Since hyperbolic navigation does not call for the transmission of any information from the vehicle under control, it is a mechanism with vast potentialities for the two-dimensional guidance of automatic projectiles," Dr. Pierce states.

"If flying bombs are to become the all weather airforces, no other system offers such immediate possibilities for the mass control of very large numbers of projectiles. Systems which require some contact between a projectile and a ground operator other than the launching crew, may well have many tactical uses in close support operation, but the possibility of maintaining the strategic bombardment by such method is remote.

"A hyperbolically (or loran) controlled flight of pilotless aircraft, on the other hand, could be operated without any close cooperation between launching crews and the controlling group, and without saturation of the guiding facilities. The receivers for hyperbolic operation of this sort would differ greatly from the present loran receivers. The equipment for pilotless aircraft should be reduced to the stage where they know only a single time difference but know it well. A pair of ground stations would establish a line of position extending from the launching area to the target, while a second pair would define the intersecting line at which the projectiles would descend. Under gyroscopic control the projectiles could be launched at any time and in any number, and the accuracy of their initial courses would need only to insure an intersection with the first hyperbolic line before passing the target."

Aircraft could be launched from many points in a large area. Dozens or hundreds of launching sites would independently send off aircraft sensitive to a single line of position. It would only be necessary to have the control system in operation. These aircraft would follow their independent courses, perhaps for half the distance to the target, until they came within the zone of influence of the loran or hyperbolic lines. Each would then change its course and come about to ride the line. The effect would be that of raindrops falling into a gigantic funnel and being concentrated into a steady stream playing the target.

"Such a stream of bombs would, of course, rapidly obliterate any objective," Dr. Pierce explains. "In practice, therefore, the ground station operators would steadily alter their timing constants so that the line followed by the projectiles would be caused to sweep back and forth over the target area, while the constants of the release line would be altered, perhaps in steps, to provide the requisite variations in range.

"The stream could be played back and forth across the target area like the stream of a fire hose, or more exactly, like the stream of electrons scanning a television screen. All this control could be exercised without any cooperation from the launching crews. Like the loaders on a battleship, they would simply maintain the flow of projectiles without giving thought to their destination."

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MEDICINE

Baby's Life Saved by Removing 75% of Blood

➤ A BABY doomed to almost certain death at its birth less than a year ago is now alive and well because physicians dared to remove 75% of the blood in the tiny infant's body. The story of this dramatic procedure which has now been carried out successfully on three desperately sick babies is told by Dr. Harry Wallerstein of New York in a terse report to fellow scientists in their journal, *Science,* (May 10).

Each baby lived because during the same hour that 75% of its blood was being drawn from one vein, a somewhat greater amount of fresh blood was flowing into another vein.

The reason for the procedure was that the baby in each case had inherited from its father the Rh positive blood factor while its mother had blood with the Rh negative factor. When this happens the slight mixing of baby's and mother's blood before birth may bring into the unborn baby's veins a substance that destroys its blood cells. Sometimes this destruction is so great the baby dies at or before birth. In other cases the baby may be born alive but jaundiced and sickly.

Transfusions of Rh negative blood sometimes tide the baby over until the blood-cell-destroying substances are got rid of. Because these transfusions do not always save the baby, Dr. Wallerstein had the idea of getting rid of the harmful blood rapidly and of making it safe to do so by simultaneous transfusion of new blood.

A more widespread use of this method for saving babies born with the condition, called erythroblastosis fetalis, is justified, Dr. Wallerstein states, by his results.

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