extended (Figure, b) or flexed at the hipjoint so that the chicken could not stand on it. In a small portion of the leucine anomalies, defects were apparent in the ossification of the skull: in 1 of them a part of the brain was extruded from the defect. In some cases, torsion of the neck appeared to occur. X-ray pictures of the toes mostly evidenced remarkable positional anomalies of the joints, the same being the case of joints of the neck vertebrae. The electroencephalographic changes mostly consisted of depression of the brain waves. The thalidomide material mostly evidenced the same changes as reported by BOCK and PETERS 1963[6]. The anomalies of the normal group consisted of functional inability to stand and to move.

The observation of disturbances in development of the electrical maturation of the brain, present at the same time as severe morphological and behavioural anomalies, mostly in the extremities, is in accord with the assumption made that teratogenic effects might reflect a disturbance in the interaction of the central and peripheral organ development. A normal interaction might depend on a normal biochemical maturation of the brain stem, possibly on a normal code function for the amino acid spectrum, at a sensitive developmental stage, with the brain stem showing intense electrical maturation (at a stage of 7–8 weeks prenatally in the human[7,8]).

Percentage and number of the morphologically normal and abnormal cases in the leucine, thalidomide and control material of chickens

	No. of cases	Hatched				Opened			
		Normal		Abnormal		Normal		Abnormal	
		No.	%	No.	%	No.	%	No.	%
Leucine	167	2	14	14	86	89	59	62	41
Thalidomide	44	5	67	2	33	29	78	8	22
Control	52	14	87	2	13	35	98	1	2

Zusammenfassung. Leucin wurde in einer Dosis von 0,2 ml einer 1%igen Lösung im Amnion von 9 Tage bebrüteten Hühnereiern injiziert. Morphologische Anomalien mit abnormen Funktionen, meistens in den Beinen und der Nackenregion, wurden beobachtet, während Röntgen-Aufnahmen Stellungsanomalien in Gelenken der Extremitäten und der Halswirbel zeigten.

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The Ability of Human Mothers to Identify the Hunger Cry Signals of their Own New-Born Infants During the Lying-In Period

From ethological studies we know that the vocal utterings of young offspring of many animals have specific meaning to their mothers and can cause behaviour directed towards satisfying the infant's needs. This process is based on innate release mechanisms[1]. In studying spectrographic and auditive identification of different types of cry signals of new-born and young infants[2–6] we have often wondered how specific and significant the cry signals of a new-born are to its mother. We are concerned here with the determination of whether a mother can, in fact, identify her own new-born's cry. Whether or not the mother's identification is the essential part of her interpretation of the infant's needs, initiating her actions to remove the disturbance causing the cry, has not been determined[7].

Material. All the 35 mothers in this study were II-paras, normal and healthy and had had an uncomplicated delivery after an uneventful, full-term pregnancy. The age of the mothers ranged between 18 and 35 years. The babies used were all healthy and normal and their age is shown in Table II.

Testing technique. The cries were recorded 5–10 min before a meal; about 3–4 h after the previous one. All possible external disturbance was carefully avoided. The cries were played for the mothers on the same day before the next meal.

The test tape consisted of 10 separate hunger cry signals from 9 different babies mixed at random; 2 cries from the baby of the testee and 8 from other babies. Every cry signal was repeated 3 times with an interval of 3 sec; the pause between different samples being 10 sec. Conscious subjective selection was avoided when making the tape. The mothers were instructed that they would hear 1 or more hunger cries on the tape which would be from their own baby. The tape was played only once, without stopping.

Two types of responses were considered in measuring the identification ability: (1) correct recognition of signals of one's own baby; (2) correct recognition of signals of other's babies.

In terms of test stimulus and response these types are designated as (1) *own-own* and (2) *other-other* responses. The number of both types of responses have been recorded and totalled for every testee. This total number of correct answers, along with the chance probability value, was used as the measure of identification. This chance probability is the statement of obtaining at least x correct answers by chance. This was calculated by ordinary bi-

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nomial formula, separately, for every testee. In case of it being smaller than 0.05 the identification was considered to be 'good', i.e. the guessing was judged to have no practical effect.

Results. The distribution of the subjects into < 0.05 ('good') and $\geqq 0.05$ chance probability classes is illustrated in Table I. About $^1/_3$ of the testees attained at least the score 9 which was the lowest 'good' answer.

Table I. Distribution of subjects according to the identification ability level

		No. of correct responses	No. of subjects	Relative frequency
Chance	0.05 ('good')	9, 10	11	0.31
Probability	0.05	0–8	24	0.69
	Total		35	1.00

Table II. Correct and incorrect identifications with response 'own baby', according to the age of the baby

	Age of baby, days							
	1	2	3	4	5	6	7	Total
No. of mothers	5	5	5	5	5	5	5	35
M_c	0.60	0.50	0.40	0.60	0.50	0.60	0.80	0.57
M_i	0.18	0.23	0.25	1.18	0.35	0.15	0.15	0.21

M_c, No. of correct identifications of the type *own-own*, per mother, divided by maximum possible amount (2.0) of the same type of responses. M_i, No. of incorrect identifications of the type *other-own*, per mother, divided by maximum amount (8.0) of the same type of responses.

Table II illustrates response patterns classified by the age of the baby. Only 'own baby' responses are included. The identification numbers of *own-own* responses per mother were divided by the maximum attainable; numbers of *other-own* responses were treated in the same way. These statistics are denoted by M_c and M_i in the Table and considered as average numbers of the 2 types of responses in relation to the maximum possible number of the same response types. The number of mothers in each age group is small and no clear increase or decrease is to be seen in either series.

Discussion. This study shows that it is possible for some mothers to identify the hunger cry signals of their own new-born baby. A few were able to do this when the baby was only 1 day old, supporting the fact that individual differences exist, in any case, in the cries of some of the babies at this age. This may also indicate the possibility of innate identification.

This study does not take into consideration the psychological factors involved in early identification and we do not know as yet what influence mental and physical stress, cultural, social and educational differences may have on this identification[8].

Zusammenfassung. Es wurden die Fähigkeiten der Mütter geprüft, das Hungerschreisignal ihrer eigenen Neugeborenen während des Wochenbettes zu identifizieren. Man hat festgestellt, dass es für etwa $^1/_3$ der getesteten Mütter möglich ist, vorher auf Band aufgenommene Stimmen der eigenen Kinder schon in diesem frühen Alter wiederzuerkennen.

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The Somatic Chromosomes of 3 Lizard Species: *Gekko gecko*, *Iguana iguana*, and *Crotaphytus collaris*

Recent technical advances, particularly the leucocyte culture method, have greatly facilitated progress in mammalian cytogenetics. The description of correct karyotypes among lower animals is also expanding as techniques for mammalian cell culture are adapted to these organisms. We wish to describe the diploid chromosome number and the somatic karyotypes of 3 lizard species: *Gekko gecko* (Gekkonidae, Reptilia), *Iguana iguana* (Iguanidae, Reptilia), and *Crotaphytus collaris* (Iguanidae, Reptilia).

In *G. gecko* and *I. iguana*, chromosomal preparations were obtained from phytohemagglutinin stimulated peripheral blood cultures. All chromosomal preparations were made following the method of Moorhead et al.[1] with minor modifications.

Measurements were made on karyotypes derived from well-spread metaphase plates to establish the idiogram of each species. The length of each chromosome (Table) is given as the percentage of the total haploid complement in *G. gecko* and the percentage of the haploid macrochromosomal complement in the Iguanids. It is obvious that the macrochromosomes of *I. iguana* and *C. collaris* are quite similar in the length of the various elements and in their associated arm ratios. Arm ratios were not calcu-

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