the recipient's central lymphocyte (neutrophil) by immunoglobulins produced by the graft's plasma cells evidently takes place.

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DISTRIBUTION OF BONE MARROW CELLS IN THE MOUSE SKELETON

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Details are given of the distribution of nucleated bone marrow cells in 17 parts of the skeleton of laboratory hybrid mice (CBA × C57BL) weighing 18-21 g. The content of bone marrow in the bones of the spine, head, lower limb, pelvis, upper limb, sternum, and ribs was 33.7, 19.6, 11.9, 8.2, and 9.0% respectively of the total.

KEY WORDS: distribution; bone marrow; hybrid mice.

With the appearance of many publications showing inequality of radiation loads and the need to evaluate doses falling on different parts of the bone marrow under these conditions, the distribution of bone marrow cells in the skeleton of animals of different species assumes great importance. Such data have now been published for rats [1, 7], dogs [3, 5-7], and monkeys [7]. Incomplete and contradictory data on the distribution of bone marrow cells in the skeleton of mice can be found in a few publications [2, 4, 7].

For a detailed study of the distribution of bone marrow cells in different parts and individual bones of the mouse skeleton experiments were carried out on 10 male (CBA × C57BL)F_1 hybrid mice weighing 18-21 g.

EXPERIMENTAL METHOD

The animals were killed by cutting the jugular veins. The skeletal bones were carefully freed from soft tissues and cut into small pieces with scissors. The bone marrow cells were flushed out of the bones with 5% acetic acid solution by means of a syringe for 2 min. The minced cranial bones were treated with 16 ml of 5% acetic acid solution, and in other cases 8 ml was used. The bone marrow cell suspensions were counted in a Goryaev chamber. The results were subjected to statistical analysis.

EXPERIMENTAL RESULTS

Data on the distribution of bone marrow cells in the bones of the mice are given in Table 1. Clearly the largest quantity of bone marrow is found in the spine, cranial bones, lower limbs, and pelvic bones. For comparison, the data of Taketa et al. [7] are given in the same table after adjustment to exclude bone marrow cells from the bones of the manus and pes. Satisfactory agreement with our own findings will be apparent. To compare the distribution

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TABLE 1. Content of Bone Marrow Cells in Skeletal Bones of Male (CBA × C57BL)F_1 Hybrid Mice Weighing 18-21 g (mean data for 10 animals)

Bones and parts of skeleton	Our own data		Data of Taketa et al. Percentage of total bone marrow
	number of bone marrow cells $(M \pm m) \cdot 10^6$	percentages of total bone marrow	
Head	77,6	19,6	19,9
skull	69,6±7,9	17,6	
mandible	8,0±1,1	2,0	
Upper limb	12,1	3,1	
humerus	9,3±1,4	2,4	2,1
forearm	2,8±0,5	0,7	
Clavicle and scapula	4,2±0,6	1,0	
Sternum	14,9±1,5	3,8	
Ribs	20,7	5,2	
I—XI (right and left)	19,9±3,0	5,0	
XII—XIII (right and left)	0,8±0,1	0,2	
Spine	133,4	33,7	39,8
cervical portion	16,4±2,2	4,2	
thoracic vertebrae I—XI	27,0±3,3	6,8	
» XII—XIII	9,6±1,4	0,2	
lumbar	39,0±4,4	9,9	
sacral	32,1±4,4	8,1	
coccygeal	9,3±1,7	2,3	
Pelvic bones	47,0±4,8	11,9	8,6
Hind limb	34,7	8,8	
femur	22,8±2,9	5,8	3,1
tibia	11,9±1,1	3,0	2,2
Total*	359,2±42,0	100,0	

*When calculating total quantity, data for paired bones (upper and lower limbs, clavicle, and scapula) were doubled.

TABLE 2. Comparison of Distribution of Bone Marrow Cells in Skeletal Bones of Laboratory Mice (in % of total) According to Data from Different Workers*

Bones and parts of skeleton	Our own data	Data of Aizina and Ovakimov [2]	Data of Epp et al. [4]
Skull	18,1	10,8	12,0
Spine	32,1		21,0
Pelvis	12,2	12,6	
Femora	11,8	15,9	
Tibia	6,2	8,7	
Limb bones	23,8	35,1	20,0
Ribs, clavicle, sternum and pelvis	21,5		47,0
Vertebral column, ribs and sternum	41,4	41,6	

*Percentage of karyocytes in skeleton of mice given excluding bone marrow cells contained in coccygeal vertebrae

of bone marrow with data of other workers [2, 4], the results were adjusted to exclude bone marrow cells from the coccygeal vertebrae. Both agreement and also substantial differences will be seen for individual bones and parts of the skeleton. These disagreements may evidently be attributed to differences both in the animals and in the technique used.

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EFFECT OF MATERNAL HYPOXIA ON NEUROGENESIS OF THE CEREBRAL CORTEX OF THE PROGENY IN RATS (AUTORADIOGRAPHIC STUDY)

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On the 15th day of pregnancy rats were exposed for 2 h to the action of hypoxia equivalent to an altitude of 8000 m, and on the 18th day of pregnancy they were given three injections of [^{3}H]thymidine. A quantitative autoradiographic study was made of the cerebral cortical neurons of the progeny at the age of 30 days. Rats surviving intrauterine hypoxia were shown to have a significantly higher percentage of labeled nerve cells in layers II, III, and V of the sensomotor cortex than in the control. A difference in the intensity of labeling also was found. It is suggested that maternal hypoxia can delay differentiation and maturation of cerebral cortical neurons in the progeny.

KEY WORDS: maternal hypoxia; brain; histoautoradiography.

Clinical evidence of the role of fetal hypoxia in the pathogenesis of mental retardation has now accumulated [1, 8, 9]. It has been shown experimentally that fetal hypoxia leads to disturbances of brain development and of conditioned-reflex activity in animals [3-7, 12]. However, the mechanism of the embryotoxic action of hypoxia has not yet been explained.

The critical period in the development of the cerebral cortex in rats is the 15th day of embryogenesis, when the gradual transition from proliferative processes to differentiation is complete [2].

In the present investigation a histoautoradiographic method was used to study the effect of intrauterine hypoxia at this period on neurogenesis of the sensomotor cortex in rats.

EXPERIMENTAL METHOD

Experiments were carried out on noninbred female rats weighing 200 g or thereabouts. On the 15th day of pregnancy the rats were exposed to hypoxia. Hypoxic hypoxia was created by "raising" the animals in a pressure chamber to an altitude of 8000 m (267.4 mm Hg, 7.5 vol.%

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