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The transmission of tetanus antitoxin through the placenta.

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In a previous paper we showed that when tetanus bacilli are present in the stools of man an appreciable amount of antitoxin can be found in the blood. We have used this fact to explain in part the comparatively low incidence of tetanus infections in Peking where approximately a third of the population are carriers of tetanus bacilli. It is of theoretical as well as of practical interest to know whether this antitoxin passes the placenta and we are grateful to Dr. J. P. Maxwell, who has supplied us with the specimens necessary for such a study.

The stools of fourteen of the mothers examined failed to show tetanus bacilli and not one of their sera was able to neutralize two M. L. D. of toxin. Tests on the sera of their children were likewise negative.

Six of the mothers proved to be carriers of tetanus bacilli and the results obtained from the examinations of the maternal and child's (cord) bloods are given in the table.

Hospital number	Child's serum 0.1 c.c.		Mother's serum 0.1 c.c.	
	Neutralizes	Fails to neutralize	Neutralizes	Fails to neutralize
	M. L. D.* toxin	M. L. D.* toxin	M. L. D.* toxin	M. L. D.* toxin
1487	5	10	5	10
1599	25	50	25	50
1668	25	50	25	50
2133	25	50	10	25
2164	25	50	----	5
4009	5	10	5	10

* Field mice were used as test animals.

It will be seen that, with one marked exception, when tetanus antitoxin was found in the mother's serum it was also present in the cord blood and that, in the majority of cases, the level in the two bloods was approximately the same.

Recent experiments have shown that the amount of antitoxin necessary to neutralize 10 M. L. D. of our toxin is slightly less than 0.01 U. S. units. Since the tests for antitoxin in the serum were made with only 0.1 c.c. this means that two of the babies were born with approximately 0.25 units, one with 0.1 units, two with 0.05 units and one with no appreciable antitoxin per c.c. of serum. Although we have been unable to study the colostrum we should expect to find antitoxin there whenever we find it in the serum, thus giving the child an additional supply.

Since the antitoxin level in the mother's and child's bloods is, in the majority of cases, at approximately the same level it seems probably that the placenta is permeable to this antibody. It indicates also that antitoxin has a much simpler structure than the other so-called immune bodies which fail to pass this organ.

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The occurrence of intranuclear inclusion bodies in certain tissues of the rabbit inoculated directly with the virus of herpes labialis.

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B. Lipschütz has described in experimental herpetic keratitis of rabbits intranuclear, acidophilic bodies, staining readily with eosin, variable in size and shape but usually round or oval and separated from the nuclear membrane by a narrow clear space. They may appear homogeneous or faintly granular. He found these bodies constantly in the nuclei of the epithelial cells and considered them pathognomonic of this lesion. Rarely similar bodies were encountered in the nuclei of connective tissue cells of the lesion. He succeeded in demonstrating these bodies also in the conjunctiva of the inoculated rabbit's eye and in herpetic vesicles of human skin.

We have attempted to determine in what tissues of the rabbit the virus of herpes labialis will take as determined by the presence of the above intranuclear bodies at or near the site of inoc-