strain P-76-2 in liquid medium while on solid medium excretion of methionine (detected by using norleucine-sensitive strains and methionine-requiring strains) occurred only after several days growth. Thus methionine over-synthesis appears to be limited by feedback inhibition in strain P-76-2 although the extra methionine formed due to the failure of enzyme repression is sufficient to overcome the inhibitory effect of norleucine.

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VIROLOGY

Dynamics of Antibody Production and of the Plasmocytic Reaction on Immunization with the Vaccinia Virus

THE mechanism of prolonged production of virus-neutralizing antibodies following single immunization with the vaccinia virus^{1,2} is still obscure.

In order to follow the regularities of this process, non-inbred albino female rats weighing 150–200 g were used. The animals were immunized subcutaneously (the foot of the hind leg) with 9.2×10^6 pock-forming units (titration on chick embryos³).

Decreasing quantities of the virus were found at the site of administration and in the popliteal (regional) lymphatic nodes during 96–120 h, and in the retroperitoneal and groin nodes during 48 h. No virus was isolated from the blood or internal organs.

Virus neutralizing antibodies (neutralization reaction on chick embryos⁴) appeared in the serum and lymphatic nodes on the 5th–7th day after immunization. Further experiments showed that the titres in the serum and homogenates of popliteal lymphatic nodes are kept at a constant level at least for 10 months (the observation term). In the retroperitoneal and groin nodes the antibody-level gradually decreased to zero during 1.5–2.0 months. In the homogenates of the spleen and axillary (distal) lymphatic nodes the antibodies did not always occur (in lower titres) and only during the first weeks after immunization. The antibody production presumably occurs mostly at the expense of regional lymphatic nodes. The reaction of the cells of the plasmatic series was examined in the prints of various lymphatic nodes stained with azur-eosin. In each preparation the cells were computed in 30 fields of vision. In parallel experiments homogenates of the same nodes were used for titration of the virus-neutralizing antibodies.

The results summarized in Table 1 illustrate the 7-month dynamics of antibody titres and the number of

immature and mature plasma cells. In all experiments the dynamics of the number of blast-cells was parallel to the plasmocytic reaction.

It will appear from Table 1 that the intensity of the plasma cell reaction does not equal the number of antibodies in the homogenates of the lymphatic nodes and in the serum. The greatest number of plasma cells was recorded within the first 5–7 days following immunization when the titres of the antibodies did not always reach the highest level. At later dates, particularly in regional lymphatic nodes, a very moderate plasma cell reaction occurred while the antibody concentration did not decrease.

In repeated experiments similar results were obtained.

Thus, the prolonged and continuous process of antibody production caused by the vaccinia virus is not accompanied by an intense plasma cell reaction. The question arises: does the small number of plasma cells available suffice for the prolonged antibody production or is this effected by other cells?

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PSYCHIATRY

Failure to detect 3,4-Dimethoxyphenylethylamine and Bufotenine in the Urine from a Case of Periodic Catatonia

AMONG various biological active amines, bufotenine and 3,4-dimethoxyphenylethylamine have recently been given special attention in the psychiatric field because of their structural similarities to normal metabolites as well as their psychotomimetic properties. The presence of a bufotenine-like compound in 'schizophrenic' urine was first reported by Fischer *et al.*¹. Recently Perry *et al.*² identified bufotenine in the normal urine from children with or without the administration of monoamine oxidase inhibitor, and Brune *et al.*³ reported that they had confirmed the presence of bufotenine in 'schizophrenic' urine. Since Friedhoff *et al.*⁴ reported the frequent occurrence of 3,4-dimethoxyphenylethylamine in 'schizophrenic' urine samples, the existence, the non-existence and/or the significance of this compound has been discussed^{5–7} and is still open to discussion.

In this sort of work, however, a strict dietary control of the investigated subjects seems to be most essential. We have been investigating the amine metabolites in the urine of periodic catatonia cases under a strict dietary control, and some remarkable changes of phenolic amine metabolism during the psychotic phase have already been reported by one of us^{8,9}. Therefore it also seemed

Table 1. NUMBER OF PLASMA CELLS AND TITRES OF VIRUS-NEUTRALIZING ANTIBODIES IN VARIOUS LYMPHATIC NODES OF IMMUNIZED RATS

Observation term	Antibody titre in the serum	Popliteal lymphatic nodes		Retroperitoneal lymphatic nodes			Groin lymphatic nodes			Axillary lymphatic nodes			
		No. of plasma cells		Antibody titre	No. of plasma cells		Antibody titre	No. of plasma cells		Antibody titre	No. of plasma cells		Antibody titre
		Immature	Mature		Immature	Mature		Immature	Mature		Immature	Mature	
5 days	1/40	235	18	1/40	132	4	1/40	68	3	0	21	16	0
7 days	1/320	340	11	1/160	26	14	1/160	3	4	1/160	26	4	1/20
1, 5 months	1/1,280	2	—	1/160	20	5	1/160	1	—	1/80	26	3	1/40
7 months	1/320	2	—	1/160	12	10	1/20	3	2	1/20	7	5	0

Note: (1) The high titre of antibodies in the serum taken after 1.5 month was a general feature of the given group of rats and does not signify a drop of the titre toward 7 months when another group was taken for the experiments.

(2) In the preparations from non-immune rats the number of plasma cells did not surpass 25–30 per field of vision.