plasma der Parenchymzellen des SFO. Das Enzym, das bei Kontrolltieren diffus im Cytoplasma erscheint, gewinnt nach Durst gute Lokalisierbarkeit. Die Aktivität der anderen von uns untersuchten Enzyme wird durch Durst nicht beeinflusst. Im Gegensatz zum SFO vermindert Durst die Aktivität der G-6-DH im Plexus chorioideus (Figur 2). In den Nuclei supraopticus und paraventricularis hypothalami kommt es durch Durst zu der bekannten starken Aktivitätssteigerung für G-6-DH[10].

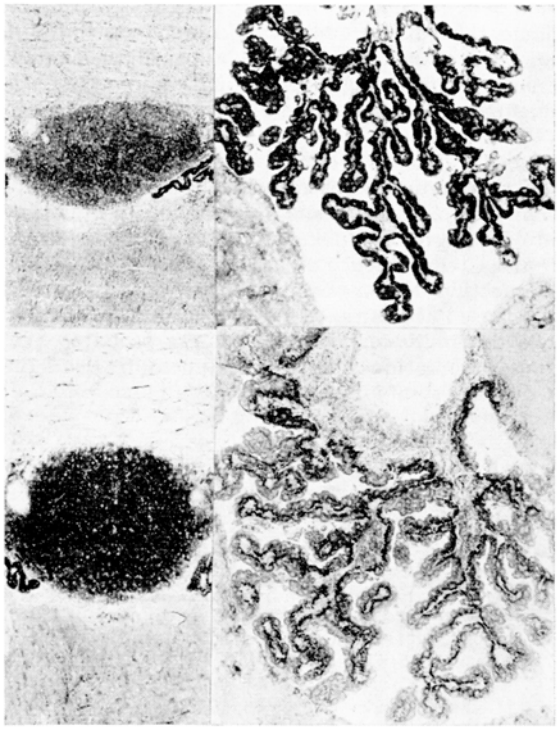

Fig. 1a. SFO, Ratte. Kontrolle. G-6-DH. Fig. 1b. SFO, Ratte. 10 Tage Durst. G-6-DH. Fig. 2a. Plexus chorioideus, Ratte. Kontrolle. G-6-DH. Fig. 2b. Plexus choriodeus, Ratte. 10 Tage Durst. G-6-DH.

Die vorgelegten Befunde bestätigen die bereits von anderen Autoren beobachtete osmotische Empfindlichkeit des SFO. Darüber hinaus machen sie wahrscheinlich, dass Durst eine starke Aktivierung der synthetischen Zellleistungen im SFO hervorruft. Offenbar wird der Pentose-Phosphat-Zyklus im SFO stark mobilisiert. Offenbleiben muss, welches Ziel hiermit in den Parenchymzellen des SFO verfolgt wird. Bemerkenswert ist in diesem Zusammenhang, dass insbesondere endokrine, aber auch andere sekretorisch tätige Zellen über einen aktiven Pentose-Phosphat-Zyklus verfügen[11]. Auffällig ist an unserem Material ferner das gleichartige Verhalten von SFO und neurosekretorischen Zellen. Möglicherweise unterstützen unsere Beobachtungen die Vorstellungen über funktionelle Beziehungen zwischen diesen beiden diencephalen Strukturen[6,7].

Summary. In the rat, thirst leads to an increase of glucose-6-phosphate-dehydrogenase activity in the subfornical organ, and to a decrease in choroid plexus.

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Anatomisches Institut der Universität, 87 Würzburg (Deutschland), 17 September 1968.

[11] J. B. FIELD, J. PASTAN, B. HERRING und J. JOHNSON, Endocrinology *67*, 801 (1960).

Effect of Temperature on in situ Feulgen Reaction with Schiff Reagent at Less Acid pH

In an earlier publication[1] it has been shown that the concentration of DNA-Feulgen is increased in hydrolysed tissue sections when staining is carried out with Schiff reagent whose pH is raised by a dilute solution of sodium hydroxide. It has also been noticed by DUTT[2] that Schiff reagent at less acid pH causes some non-specific reaction when used at 32 °C but does not cause non-specificity when staining is carried out at 5 °C. The purpose of the present investigation is to find out the effect of different temperatures that help to cause optimum stainability in hydrolysed tissue section by Schiff reagent at less acid pH.

The Schiff reagent was prepared according to DE TOMASI[3] with pararosaniline (C. I. No. 42500) manufactured by National Aniline Division, New York, USA. The material used in this investigation consisted of kidney of a male Indian water buffalo (*Bubalus bubalis* L.) that was fixed overnight in 10% neutral formalin, washed thoroughly in tap water and then preserved in 70% alcohol. Paraffin sections, 10 μ in thickness, were used throughout. Sections were hydrolysed in 1 *N* HCl at 60 °C for 7 min, rinsed in distilled water and then stained with Schiff reagent whose pH was raised from the initial value of 2.3 to 4.0 by the addition of a 0.2 *M* aqueous solution of borax. Staining of these sections was carried out at different temperatures, viz. 5°, 18° and 25 °C for 50 min at each temperature. All slides were stained and processed simultaneously. Following staining, slides were bleached with the usual bleaching solution for 15 min with 3 changes of 5 min each. Later they were dehydrated through grades of alcohol, cleared in dimethylaniline and then mounted in DPX, manufactured by the British Drug Houses, London. The amount of DNA-Feulgen in arbitrary units was determined by a microspectrophotometer of the Pollister type[2]. For measurement of the amount of DNA-Feulgen, whole nuclei from the periphery as well as from the centre of the section were selected. The 2-wave-length method of ORNSTEIN[4] and PATAU[5] was followed, the wave-lengths being 560 and 500 nm. DNA values were calculated according to MENDELSOHN[6].

[1] M. K. DUTT, J. Histochem. Cytochem. *11*, 390 (1963).
[2] M. K. DUTT, Nucleus, Calcutta *10*, 168 (1967).
[3] J. A. DE TOMASI, Stain Technol. *11*, 137 (1936).
[4] L. ORNSTEIN, Lab. Invest. *1*, 250 (1952).
[5] K. PATAU, Chromosoma *5*, 341 (1952).
[6] M. L. MENDELSOHN, J. biophys. biochem. Cytol. *4*, 415 (1958).

The mean nuclear diameter and its mean DNA content in the kidney of the Indian water buffalo at different temperatures

No. of nuclei	Temperature (°C)	Mean nuclear diameter (μ)	Mean DNA content (S.E.)	Difference between means	*t*-value	*P*
71	5	6.36 ± 0.61	268.42 ± 9.55 (A)	A vs. B = 121.65	7.23	< 0.001
40	18	6.53 ± 0.60	390.07 ± 14.67 (B)	A vs. C = 262.96	11.20	< 0.001
42	25	6.62 ± 0.64	531.38 ± 25.93 (C)	B vs. C = 141.31	4.67	< 0.001

Staining reaction started within a minute of staining at all the different temperatures. Optimal staining was attained within 15 min at the different temperatures. Speed of reaction thus remained the same no matter at what temperature the slides were stained. The DNA values at different temperatures are presented in the Table. From the Table it is apparent that there is a progressive increase in the amount of DNA at temperatures from 5–25 °C, the optimum amount of DNA being at the maximum temperature used in this investigation. These findings are in agreement with those of ATKINSON[7] who has noted a gradual increase of the amount of dye reformed with Schiff reagent and formalin by colorimetric method at temperatures of 5–39 °C. Within the range studied by him the relationship was linear[8].

Zusammenfassung. Die Feulgenfärbung geht umso besser, je höher im Bereich von 5–25 °C die Temperatur ist. Als Material wurde Wasserbüffelniere verwendet.

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Department of Zoology of the University, Delhi 7 (India), 5 June 1968.

[7] W. B. ATKINSON, Stain Technol. *27*, 153 (1952).

[8] The author wishes to record his appreciation to Prof. B. R. SESHACHAR for providing necessary facilities to carry out this investigation.

'Paradoxical Microgyric Cortex' Associated with Intrauterine Hydrocephalus

A little-noted fact found in association with hydrocephalus which has begun during intrauterine life, in human subjects, is the microgyric cortex. The term microgyric is used here to define small gyri with normal cortical lamination as is usually found with intrauterine hydrocephalus, and does not mean abnormal cortical lamination pattern as is sometime implied (CROME[1]).

In the course of examination of 56 hydrocephalic human brains associated with the Arnold-Chiari malformation, both at the Fountain Hospital, Tooting, London, in the laboratory of Dr. L. CROME, and in the neuropathological laboratory of Prof. W. H. MCMENEMEY, at the Maida Vale Hospital, London, there was noted in every case the presence of this microgyric pattern.

[1] L. CROME, J. Path. Bact. *64*, 479 (1952).

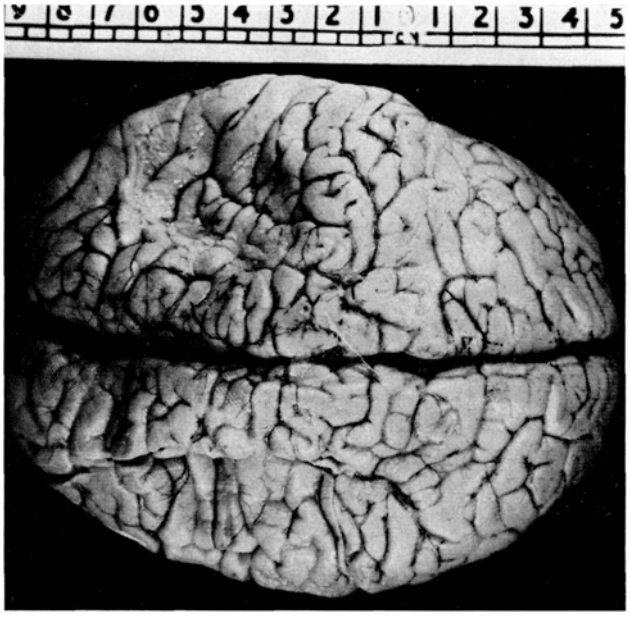

Fig. 1. The superior part of the hydrocephalic brain of a new-born human presenting with the Arnold-Chiari syndrome, showing the microgyric cortex.

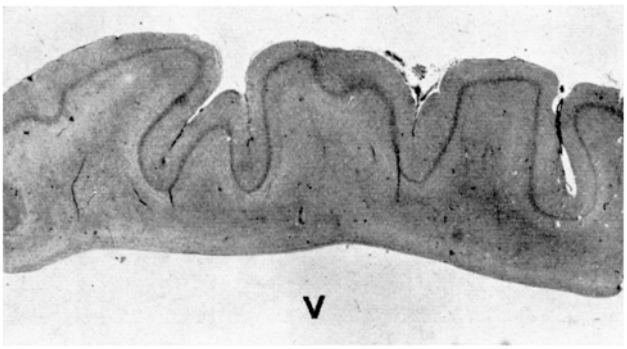

Fig. 2. Small cortical gyri in the parietal lobe of a new-born human infant. The letter V indicates the lateral ventricle and serves to demonstrate the thinness of the cortical wall. Hematoxylin-eosin. × 3.9.