3. It has been shown in the benzyl and mesyl derivatives of 1,2-O-isopropylidene-5,6-anhydro-β-L-idofuranose that opening of the oxide ring with retention of the isopropylene group is possible under the conditions of acid hydrolysis.

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HYDRODYNAMIC CHARACTERISTICS OF THE CAPSULAR POLYSACCHARIDES OF *Klebsiella*

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Investigations of the acidic polysaccharides isolated from the capsules of *K. scleromatis* and *K. ozaenae* under the conditions of high-speed sedimentation and an approximation to equilibrium (Archibald's method) has made it possible to regard them as polydisperse homogeneous substances with different molecular masses and a nonspherical form of the molecules entering their composition.

The acidic polysaccharides of the capsules of klebsiellae *K. Scleromatis* and *K. ozaenae* (family Enterobacteriaceae) and their antigenic specificity is the main factor of the pathogenicity of this type of bacteria [1, 2]. This fact explains the considerable interest in the detailed study of these compounds.

We have considered the behavior of the capsular polysaccharides isolated from *K. scleromatis* and *K. ozaenae* (KPS-3 and KPS-4; serological types 3 and 4), in a centrifugal field. The experimental results are presented in Table 1. The sedimentation diagrams obtained in an ultracentrifuge (Fig. 1) each have a single peak for all concentrations of the polysaccharides under investigation. This indicates the existence of a polydispersity of these polysaccharides, as is confirmed by the considerable increase in the apparent coefficient of diffusion in high-speed sedimentation experiments, and also by the nonuniformity of the molecular masses at the meniscus and at the bottom of the cell in

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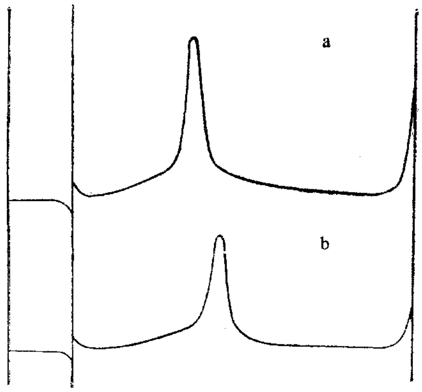

Fig. 1. Sedimentation diagrams: a) KPS-3; b) KPS-4.

TABLE 1. Molecular Masses and Sedimentation and Diffusion Coefficients for the Capsular Polysaccharides of Klebsiellae (KPS-3 and KPS-4) Determined by the High-Speed Sedimentation Method and by the Unstable Equilibrium Method (Archibald's method)*

Sample	Series†	Sedimentation coefficient, $S_{20,w}$, sec	Diffusion coefficient, D_w^o	Weight-average molecular masses according to Svedberg, M_{ww}	Weight-average molecular mass according to Archibald M_w	Ratio of the coefficients of friction of the molecules studied and of spherical molecules, f/f_k
KPS-3	1	$4{,}80\cdot10^{-13}$	$10{,}7\cdot10^{-7}$	$2{,}95\cdot10^{5}$	$3{,}86\cdot10^{5}$	4,76
	2	$7{,}86\cdot10^{-13}$	$24{,}6\cdot10^{-7}$	$2{,}07\cdot10^{5}$		2,34
	3	$2{,}33\cdot10^{-13}$	$45{,}5\cdot10^{-7}$	$3{,}31\cdot10^{5}$	$5{,}88\cdot10^{5}$	10,73
KPS-4	1	$17{,}83\cdot10^{-13}$	$6{,}83\cdot10^{-7}$	$7{,}2\cdot10^{6}$		1,62
	2	$16{,}52\cdot10^{-13}$	$10{,}65\cdot10^{-7}$	$4{,}3\cdot10^{6}$		1,97

*The values of S, D, and M were obtained by reducing the concentration to zero taking into account the intracellular effects of compression and dilution and with a correction for nonideality.
†The series correspond to the samples of polysaccharide obtained at different times.

Archibald's method for all concentrations used in the experiment. A pronounced concentration dependence of $1/S_c$ on C is observed. The ratio of the coefficients of friction of the particles investigated to spherical particles f/f_k (a parameter characterizing the shape and dimensions of the molecule) of more than unity [3] indicates that the molecules of the specimens investigated have a form differing from spherical. More reliable information on the shape and dimensions of the molecule can be obtained after additional investigations of the dependence of the sedimentation coefficients on the ionic strength.

EXPERIMENTAL

For the investigation we took the capsular polysaccharides from *K. scleromatis* (KPS-3) and those from *K. ozaenae* (KPS-4) in the concentration range of from 0.01 to 0.00125 g/ml. The solvent used was a 0.1 M solution of sodium chloride. The experiments were performed in an analytical centrifuge of the Beckman type (model E) with schlieren optics under conditions of high-speed sedimentation and of approximation to equilibrium [4, 5]. The concentration dependences of the sedimentation coefficient $S_{20,w}$, the coefficient of diffusion D_w^o, and the weight-average molecular masses M_w were obtained.

SUMMARY

The study of the acidic polysaccharides from *K. scleromatis* and *K. ozaenae* in a centrifugal field has made it possible to regard them as polydisperse homogeneous substances with differing molecular masses and has permitted the shape of the molecules entering into their composition to be estimated.

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FATTY ACID COMPOSITION OF THE LIPIDS OF WHITEFISH OF THE OB BASIN. II. INFLUENCE OF LOCALIZATION ON THE COMPOSITION OF TOTAL AND NEUTRAL LIPIDS

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The composition of methyl esters of the fatty acids of the total and neutral lipids from the viscera, dark muscles, and brain of pelyads from the water bodies of the Ob basin have been studied by gas-liquid chromatography in comparison with the fatty acid composition of the total lipids of the light muscles. In all the lipids, 29 acids were detected and 27 were identified, six of which made up 75 to 79% of the total. It has been shown that the uniqueness of the total lipids of the viscera and dark muscles is due to a high content of eicosapentaenoic acid, while the brain lipids are distinguished by a high palmitic acid content. In the neutral lipids, regardless of their localization, the concentration of polyenes falls and the concentration of monoenes rises.

There is extremely little information in the literature on the dependence of the fatty acid composition of fish lipids on their localization in the body of the fish, although this is of interest not only for physiologists but also for technologists. It is obvious that the fatty acid composition of the lipids must depend on their localization. There are descriptions of quantitative differences in the fatty acid composition of the dark and light muscles of the tunny [1] and of two species of hake [2]. Drozdowski et al. [3] have given the results of an investigation of the fatty acid compositions of the lipids of the muscular tissue, head with skin, backbone with fins, and viscera. All these workers found differences in the amounts of palmitic, stearic, oleic, eicosenoic, docosenoic, and docosahexaenoic acids.

Our aim was to show the dependence of the fatty acid composition of the lipids of the whitefish *Coregonus peled* (Gmelin) on their localization. The whitefish belongs to the fatty fish [4], and therefore the bulk of its lipids consists of "depot" lipids. The fatty acid compositions of the lipids of the dark muscles, the brain, the internal fatty tissues, and the lipids of the light muscles were studied by gas-liquid chromatography. The results are given in Table 1.

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