When being compared on a series of hemodynamic and metabolic characteristics (body mass index, glycemia, cholesteremia), the men and women differed in the abdominal adipopexia degree (waist circumference (WC) accordingly 99,9±1,3 and 89,5±0,9 cm; p<0,001), triglyceride (2,2±0,2 and 1,6±0,1 mmol/l; p<0,001) and α-cholesterol (1,3±0,1 and 1,6±0,1 mmol/l; p=0,002) levels. BI authentically correlated with the body mass index (r=0,34; p=0,047), WC (r =0,66; p=0,004) and triglycerides (r=0,29; p=0,046) in the men. BI in the MS women correlated with WC only: r=0,40 (p=0,02).

The MDA levels in the MS men (5,1±0,3 nmol/1 mg of LDL albumin) exceede the control ones(2,3±0,2; p<0,01). In the MS and healthy women these parameters didn't differ (2,8±0,1 and 2,6±0,1accordingly; p>0,05). Authentic correlations (p<0,05) of the MDA levels and insulin were detected both in the men (r=0,35) and women (r=0,50), that reflects the prooxidant role of insulin. In the men this relation became significant in conditions of hyperinsulinemia (≥15 мкед/мл), and in the women it didn't depend on definite BI values. At the same time, the MDA parameters correlated with WC (r=0,43; p<0,05) as well in the men. There are no correlation relationships of the MDA levels and AA indexes detected.

The actual participation of insulinemia in the oxidative stress realization through the LDL peroxidation mechanism in conditions of the MS cardiovascular cluster was detected in the men and women. This influence, depending on the sex, is realized at various BI levels. The basal insulinemia leading role in the interrelations with the AA clinical marker – the waist circumference in men, has been established. Their basal hyperinsulinemia manifests its prooxidant influence in two ways: through the direct relation with MDA and indirectly – through the AA parameters; in women insulinemia influences MDA levels irrespective of its basal level parameters. Taking into account the BI correlation with the WC parameters, irrespective of the sex, in the MS diagnostics one can rely on the AA and not concrete levels of insulinemia from the clinical and prognostic point of view.

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## FEATURES OF ENTOMOPATHOGENIC BACTERIA DISTRIBUTION THROUGH MIGRATING BIRDS

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The role of migrating birds in the transcontinental distribution of entomopathogenic bacteria has been studied not well enough. The purpose of our research is to study the bio-ecological interrelations of Bacillus thuringiensis bacteria with various kinds of migrating birds. As it is known, the involvement of birds into this process occurs through parasitizing of blood- sucking insects and mites on them (Pustovaya, 1971; L'vov, Iliychov, 1979; Novikov, 1984; Olsufiyev, Dunayev and others, 1970). The survival rate of crystal-forming bacteria in the digestive tract of birds was established by W.A. Smirnoff, C.F. Macloed (1961); I.C. Adams, P.A. Hartman (1965). The authors do not exclude the leading role of birds in preservation and distribution of these parasitizing kinds in the external medium. Literary evidences testify that, when studying the ecologo-geographic distribution of Bacillus thuringiensis strains, it was not paid special attention to migrating birds, pathogenic viruses and bacteria have been studied far more deep for that matter.

In different years we carried out microbiological research of the internal organs of migrating birds and 43 entomopathogenic bacteria strains, which are represented by eight subspecies: Bacillus thuringiensis var. thuringiensis (12 cultures); alesti (4); kurstaki (4);sotto (5); subtoxicus (7); kenyae (3); galleriae (6); finitimus (2), were segregated. More than a half of the strains were segregated from the gastric contents. Among animal food birds there are much more bacillicarriers than among vegetal and mixed food. The migration routes of the trapped bird units cross practically all the continents of the Earth, the most visited of which are Africa, South America and Asia. The majority of the examined birds are represented by the species: whoop Upupa epops (L.); common swallow - Hirundo rustica (L.); sand swallow - Riparia riparia (L.); starling - Sturnus vulgaris; rosy pastor - Pastor roseus (L.); gray wagtail - Motacilla cinerea; yellow-headed wagtail - Motacilla citreola (Pall.) and others. We also studied the microflora of biting lice of 11 species in quantity of 162 units collected from wild birds, from which such rare serovars as var. morrisoni, var. kenyae, var. alesti. were segregated.

The variety of the bacteria obtained is conditioned by the fact that birds, especially insect-eating ones, eating various insects, among which there is a high percentage of infected species, become infected with micro-organisms of the Bacillus thuringiensis group, as, however, with other species of viruses and bacteria. This situation is proved by frequent segrega-

tion of the strains out of the stomach and intestines of the examined wild birds.

Blood-sucking arthropods, which serve as bacillicarriers, perform a role in birds infecting with the given group bacteria. It is quite possible that the Bacillus thuringiensis strains segregated from the wild birds' liver is connected with the delivery of the bacterium from the blood-sucking arthropods. The mites, possessing a complex biological cycle of development, being closely connected with the microflora of the external medium, feather and skin integument of its host are constantly infected with micro-organisms of various taxons. According to the data from Petrishcheva P.A. (1967) these contacts promoted the appearance of symbiotic interrelations in mites with many micro-organisms in the process of evolution. However, Bacillus thuringiensis, possessing entomopathogenic properties, can propagate in certain cases in the intestinal opening of insects and mites, the bloodsuckers being most likely ready to deliver the crystal-forming bacteria transmissibly.

From the materials got on the bacteriological examination of the internal organs of wild birds and their ectoparasites one can conclude that birds, especially insect-eating ones, take direct part in the distribution of the given group of micro-organisms, defining their ecological amplitude.

The existence of intercontinental migration paths of birds (on the ringing data more than half of the wild birds examined by us arrive in the CIS territory from South America, South and North Africa, India, Azores and British Isles…) and establishment of a certain percentage of bacilli carriage among their parasites (plumage lice, bloodsucking bugs and mites) allow us to assume that migrating birds perform a significant role of transcontinental exchange of Bacillus thuringiensis strains.

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## IMMUNOHISTOCHEMISTRY OF SOMATOSTATIN SPECIFIC DENSITY IN PANCREATIC GLAND OF FETUSES AND NEWBORNS

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It is known that somatostatin has asignificant effect on various digestion processes, slows down the inflow of nutrient materials into portal blood and blocks the critical increase of metabolites in blood [Klimov P.K. and coauthors, 1987].

The earlier carried out investigation of the incretory part of the developing pancreatic gland revealed regional morphogenesis features of the organ. It was detected that against the background of the gland's ductal part hypoplasia the insular one exceeded the innate norm in its specific density [Sukhanov S.G., Ulyanovskaya S.A., 2006, 2007]. In connection with this it was decided, first of all, to study the content of somatostatin as one of the main metabolites of the insular tissue of the fetal gland.

The purpose of the work is to study and evaluate quantitatively the content of somatostatin granules in the pancreatic gland tissue of fetuses and newborns by the immunohistochemical method.

Material and methods of the investigation: the work was carried out on the autopsy material collected at the department of morbid anatomy of the SEH ARTH of Archangelsk, the immunohistochemistry and histiometry of fetuses' (17-40 weeks) and died newborns' (18 cases) pancreatic gland was carried out. The glands wee fixed in the neutral formaline; for the somatostatin granules identification the monoclonal antibodies to somatostatin (DAKO) were used.

The investigation results: during the whole research period the granules containing somatostatin were detected. The granular cells were located, as a rule, in the insular periphery. The content of colored granules in the cells was characterized by the undulation dependency, and the statistical series – by different degree of asymmetry and excess. The average values of the specific density (Aai) in the gland's tissue made: in the fetuses up to 20 weeks - 8,5±0,39; 24-27 weeks - 12,1±0,56; 28-31 weeks - 13,5±0,64; 36-40 weeks - 7,8±0,41; in newborns - 11,1±0,59.