

City celebrates its 1038th birthday in grand style

Duchess Olga welcomes hosts and guests of Vitebsk on boat solemnly floating along Zapadnaya Dvina

By Olga Belanovich

The appearance of a noble person at the city's birthday celebrations (with whose name historians connect the foundation of the city) is already a tradition. Adults and children alike flocked to meet the Duchess, viewing her as an embodiment of the past, as if years could suddenly turn back, allowing us to fly through the centuries.

It's no secret that the capital of the *Slavianski Bazaar* increases in beauty each year. New suburbs appear, served by contemporary services and major shopping sites. Although the city celebrated its 1037th anniversary only recently, many landmark events have been taking place: the huge Korona Trade Centre has thrown open its doors, as has the Marco-City Business Centre, the large Nika store and others. The number of factories has also increased, with local entrepreneurs and foreign investors eagerly injecting money into the region's economy.

Vitebsk is improving its outlook in front of our eyes, turning into a true European centre of culture, industry and tourism, as noted by Claudia Possardt, the Deputy Bürgermeister (Deputy Governing Mayor) of Frankfurt-



Vitebsk celebrates its birthday

am-Oder (Vitebsk's twin city), at a speech delivered to mark the holiday. The city on the Dvina

River has been widely admired by envoys from the cities of Haskovo (Bulgaria), Daugavpils (Latvia),

Smolensk and the Stupin Municipal District of the Moscow Region, as well as by diplomats from

Latvia, Ukraine, Kazakhstan and Armenia and officials from neighbouring regions of Belarus.

For three days, the city was filled with merrymaking: concerts, exhibitions, fireworks, discos and dance evenings in the park. To the sound of a brass band, the city also hosted a parade of retro automobiles and a concert of national cultures: *Vitebsk — Our Common House*. Creative workshops were organised, in addition to a trade fair of arts and crafts and architectural projects, entitled *The Future of our Native City*. Writers and poets held meetings and tourist agencies promoted their services.

Thousands of residents gathered along the banks of the Zapadnaya Dvina River, near Victory Square, to take part in a spectacular water and sporting holiday: *From the Varangians to Greeks... A Relay Race of Time*. Duchess Olga, accompanied by an escort of knights, was welcomed by guests, as well as Great Patriotic War soldiers and other heroes. It was as if a time machine operated before guests' eyes.

Finally, those gathered were able to admire the work of Vitebsk rescuers, who proved their mastery on the ground, in the air and on water, accompanied by huge applause.

Real analysis without injury

It's no longer necessary to draw blood for testing, with the invention of a non-invasive method which reads light reflected from the skin to learn blood composition. Of course, doctors are yet to fully approve the new innovation, being keen to experiment further, especially regarding subtle analysis. Nevertheless, research continues, with reason to believe that the method invented by the Faculty of Radio Physics and Computer Technologies (Belarusian State University) will soon gain wide application.

By Piotr Denisov

Sergey Lysenko (Ph.D. maths and physics), an associate professor within the Computer Science and the Computer Systems Department, tells us, "Our new approach uses the reflection spectrum to automatically analyse blood composition (eliminating interference from the thickness of the skin, pigmentation and moisture). To measure hemoglobin, bilirubin, melanin and oxygenation we first model both the norms and pathologies, for use in comparing with a range of other data in real time. Unlike the method used abroad, which uses a great many spectral images of skin from people suffering from various diseases, our method is quicker and relies upon fewer resources. The values of diagnosed parameters are sent immediately to medical staff, without needing comparison or

evaluation. We use a mathematical formula based on the analytical relationship between measured and determined parameters. Our approach is unique worldwide, determining the gas composition of the blood, structural parameters and component analysis of the skin and mucous membranes. We can rapidly analyse every chemical part of the blood with huge accuracy. Our method is already protected by patents, and we hope that, soon, it will be implemented in practice."

Interestingly, our Belarusian scientists simply used computer software to acquire spectral portraits of blood, skin and mucous membranes — allowing confident conclusions to be drawn. Data on normal and cancerous human tissues was gathered from foreign sources, with algorithms superimposed; this allows for an independent experimental result, as never



Dr. Irina Lapshina works on new biochemical analyser

seen before. Now, all that remains is to test the research on various groups of patients to prove the efficiency under laboratory, clinical conditions.

Professor Mikhail Kugeyko (Ph.D. maths and physics), who heads the Department of Quantum Radio-physics and Optoelectronics at the BSU, explains, "The method sets a new standard in medicine. For example, during surgery, it's crucial to control blood loss. This can now be defined with previously unattainable precision, in real time, using our spectral method. It also allows early diagnosis of malignant tu-

mours in the skin, breast, oral mucosa, oesophagus and some viscera, since tumours have a more intense blood supply than normal tissue. During endoscopy of the stomach or gastro-intestinal tract, we evaluate coloured images of the mucous membrane not by eye but using a computer (since the colour change is so slight in the early stages of tumour development). Spectral surveys give us a clear picture, showing not only the presence of a tumour but its size and developmental stage. We can then plan treatment more effectively, reducing the need for surgical intervention."

Journey through interactive tourist map

By Andrey Yermeev

Tour routes through Belarus located online

Tour routes across Belarus will soon be available online, on the updated site of the National Tourism Agency, explains its Director, Vyacheslav Chernov. Speaking at a press conference, he noted that a new version of the portal is almost ready for launch, offering an interactive tourist map and database of excursions.

"The technical aspects are now complete, with only certain tasks remaining," he tells us. This year, all promotional materials produced by the National Tourism Agency are to be accompanied by adverts for the 2014 World Ice Hockey Championship. "Regardless of the theme of our pamphlet, we believe it will be appropriate to emphasise this major event in Minsk, which will certainly be of interest to foreign tourists," Mr. Chernov adds.

In the near future, the National Tourism Agency plans to develop thematic workshops promoting aspects of Belarusian leisure and relaxation, with fairs already held in Sweden, Latvia and Russia.