110 years of working towards a healthy life for all

A look back at the history of the Scientific Institute of Public Health
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A look back at the history of the Scientific Institute of Public Health

Wesley Van Dessel
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The Scientific Institute of Public Health has been existing now for more than a century. The anniversary we are celebrating in 2014 is therefore an excellent moment to take a look back at the eventful past of our institute.

Over the last eleven decades the Institute has grown to become a *Grande Dame* on the public health stage, and her expertise is recognised both in Belgium and abroad.

In those 110 years the institute has seen exponential expansion, as well as difficult periods. The following chapters tell the story of the key events that have shaped the Scientific Institute of of Public Health throughout its existence.

Great things have been achieved here, as well as many smaller ones, but always by people who put their hearts and souls into their work for the institute. Many are doing that today – and others will be doing it tomorrow. Yet others were doing that yesterday and thus laying the foundations on which our institute is building today.

This book is dedicated to them.

*Johan Peeters* - Brussels, 26 November 2014
The new century heralds an improvement in public health
When Belgium achieved independence in 1830, it did not inherit a central public health administration. Public health policy was, following the model of Napoleonic and Dutch legislation, largely determined at local and provincial level. The main decision-making among the splintered authorities was left to the lower administrative echelons. The burgomasters were responsible for hygiene, health and the ‘dangerous, unhealthy or irksome establishments’. The regulations on the prevention of infectious diseases and on medical organisation were a matter for the provincial governors, who were assisted by the corresponding local and provincial medical committees. Even when the rapid spread of cholera in 1831-32 clearly outstripped the ability of the local and provincial administrations to deal with the situation and a national approach seemed essential, the national government did no more than promulgate laws and resolutions, and set up councils and committees.

An embryonic laboratory was set up in a number of provinces. For example, the cholera epidemic of 1892 in Antwerp saw the birth of the Provincial Institute for Hygiene. A similar body was created at the State Universities of Ghent (1898) and Liege shortly afterwards. In 1900, the Institute for Serotherapy and Bacteriology (later, the Pasteur Institute of Brabant) was founded in Brussels.

The edicts of the provincial administration had precedence over those of the central administration for a long period of time and continued to have a lasting effect for years. A first step towards centralisation of supervision came in 1845, with the creation of the position of ‘Health Inspector’. Originally, there was only one such inspector at the central administration of the Ministry of Agriculture, and he was responsible for the entire country. In 1911, the health department was transferred to the Ministry of Internal Affairs and it was not long before there were inspectorates in all the provinces. From then on, the health inspector became the pivotal figure between the various bodies responsible for public health. A number of them – such as Albert Bessemans and Louis Van Boeckel – played a prominent role in the history of our institute. The inspectors performed many different tasks. They were much occupied with such things as the prevention and elimination of infectious diseases through vaccination and supervision, and they advised provincial governors and local authorities on such matters as prevention measures and the influence of urban planning on the spread of infectious diseases. In addition, they oversaw the dangerous, unhealthy or irksome establishments that came under the authority of the health administration, but also the technical education in nursing, physiotherapy, obstetrics and childcare, and the dispensaries and sanatoriums subsidised by the State. In West Flanders, Limburg and Luxemburg, the health inspectors were also responsible for a bacteriological and chemical laboratory. Those State laboratories were set up with State aid in the provinces where there were no provincial institutes of hygiene. They carried out analyses for doctors and competent government administrations, and they analysed water samples as part of the supervision of water distribution. All those laboratories went their own separate ways; there was no question of consultation or coordination at that time. That would only come about much later, with the laboratories under the authority of the Ministry of Public Health (set up in 1936).”

Those early developments helped fueling an increase in life expectancy. In 1843 the life expectancy of a one-year-old infant was about 45 years. By 1909, that had already increased by ten years. Such progress was largely due to the fall in the number of deaths caused by infectious diseases, thanks to better hygiene and prevention.

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CHOLERA AND TYPHUS

In the 19th and at the beginning of the 20th century there were no fewer than six major cholera pandemics. Three of them started in Europe. Just after Belgium’s independence cholera broke out for the first time on a world scale (2nd pandemic, 1829-1851). In 1832 there were 1307 cases of cholera in Antwerp, of which 710 resulted in death.

In 1846 a wave of typhoid fever reached our country, a disease that could spread through polluted water. Between January 1846 and July 1848 more than 60,000 fell ill, of whom 11,900 died. No less than 355 towns had to struggle with this epidemic, most of which were in East and West Flanders.

In 1848, just after the typhoid epidemic had left the stage, a second wave of cholera would take the lives of 22,400 Belgians. In the period between 1829 and 1851 several hundred thousand Europeans died of the ‘blue death’, as cholera came to be known.

The fourth great cholera pandemic (1863-1875) claimed more than a million victims. The disease swept without mercy through our country too, after the contaminated ship ‘Agnes’ from Bremen came into harbour. In Antwerp alone, nearly five thousand people fell ill, of whom some three thousand died. The number of deaths in Belgium as a whole rose to 30,000.

In 1892, during the fifth pandemic (1881–1896) Belgium was assailed by cholera for the last time, with 2,611 victims.

The years of the great discoveries

Robert Koch and Louis Pasteur: the founders of modern microbiology

The Frenchman Louis Pasteur and the German Robert Koch are far and away the two most important people in medical microbiology in the second half of the 19th century. It was thanks to their discoveries that people realised that diseases were caused by microorganisms.

Pasteur began his scientific career in 1848 with research into tartaric acid crystals. He discovered that there were two forms of tartaric acid, the crystals of which were one another’s mirror image, whereby one could be used as food by bacteria and the other not. With this discovery, he became one of the first to de-
scribe the macroscopic effects of the spatial structure of molecules, and the father of stereochemistry.

After a series of experiments between 1860 and 1864, Pasteur disproved the ‘Generatio Spontanea’ theory, which posited that pathogens arose spontaneously. In the same period he also showed that food products that were subject to deterioration could be kept longer by heating them for a short time, because the heat greatly reduced the bacteria present in them. That process became known as pasteurisation, and was applied in French wine production, among other things, to prevent the wine from turning into vinegar during maturation.

In 1863, influenced by the work of Pasteur on fermentation, Casimir Davaine largely revealed the cause of anthrax, but the idea of an infection caused by a microorganism (introduced in 1840 by Jakob Henle) was far from being generally accepted at the time. Inspired by Henle and others, Robert Koch developed a pure culture of the bacterium that Davaine had described. He discovered the spore-stage of this microbe, inoculated some animals with it and saw that it caused anthrax. This discovery was the basis for ‘Koch’s Postulates’ (1890), a series of 4 criteria that were necessary to confirm a causal connection between a microbe and a disease.

One year before this, Henri Toussaint had identified the bacterium that caused cholera in chickens and he called it Pasteurella, in honour of Pasteur. By chance, a culture of this bacterium was exposed all weekend to the air in Pasteur’s lab. Pasteur and Emile Roux, a colleague, noticed that chickens suffered less from an infection with these bacteria. From this observation came the very first vaccine against chicken cholera, based on the weakened pathogen of this disease. Two years later, Pasteur introduced a vaccine against anthrax based on the same principle.

Koch, on the other hand, focused on tuberculosis (TB). In 1882 he reported that the slow-growing bacterium Mycobacterium tuberculosis was responsible for the disease. With the isolation of tuberculin he thought that he had found a cure for TB, but that assumption turned out to be wrong. Tuberculin would nevertheless lead to the development of a test that, more than a century later, is still being used to detect exposure to the tuberculosis bacterium. His work on tuberculosis won him the Nobel Prize for Physiology and Medicine in 1905.

Koch’s work on TB was interrupted by an outbreak of cholera in Alexandria (Egypt). The risk that the disease would make its way to Europe alarmed both Koch and Pasteur. The former very soon suspected the comma-shaped bacterium Vibrio of causing cholera. However, the epidemic was over before he could prove his theory. It was only after re-

The disease probably most closely linked with the name Pasteur is rabies. Pasteur developed the rabies vaccine in 1885. It was the first human vaccine since Edward Jenner’s cowpox vaccine in 1796. On 6 July 1885, Pasteur tested it on the 9-year-old Joseph Meister, who had been bitten by a rabid dog. The lad recovered and after a number of subsequent successes with the vaccine, the donations began to flood in. They were used to set up the Pasteur Institute in 1889 in Paris, the world’s first biomedical institute.
Jules Bordet, Belgian appointment with medical history at the start of the 20th century

Belgian scientists also made an important contribution to scientific discovery at the start of the 20th century. Probably the most important name from that period is that of Jules Bordet (1870-1961). His scientific merits can hardly be overestimated. He was a brilliant student, and together with his brother Charles, his elder by two years, he graduated in 1892 with the highest distinction as a doctor of medicine from the Université Libre de Bruxelles (Free University of Brussels). In 1894 he was given a travelling scholarship from the government to work in the laboratory of Elie Metchnikoff at the Pasteur Institute in Paris. Metchnikoff had just discovered phagocytosis, which basically means the ‘digestion’ of bacteria by white blood cells. That discovery opened the door to unravelling the mysteries of cellular immunity.

In 1895 Bordet made one of his most important discoveries. He demonstrated that there had to be two elements present in serum in order to destroy bacteria (specifically their walls). The first is an ‘antibody’, which

Half a century before Koch and Pasteur demonstrated bacteria and viruses as the cause of infections, Ignaz Semmelweis – a Hungarian doctor in the maternity department of the Allgemeines Krankenhaus in Vienna – had already discovered empirically the importance of antisepsis in medical practice. At that time most women gave birth at home. Only women who could not afford to engage a midwife, or who were weakened or struggling with complications, went to the hospital. Puerperal fever was a frequent disease at the time, killing nearly one woman out of four in childbirth.

In those days puerperal fever was ascribed to overcrowding in the wards, poor ventilation, the onset of lactation, or to so-called miasmas (airborne, soil-carried, or seasonally dependent rotting organic matter). Semmelweis noticed that these theories could not explain the cause of the fever, but it was only after the death of Jakob Kolletschka, a colleague pathologist-anatomist, that he came to an important conclusion. Kolletschka had injured himself with a scalpel while examining the body of a woman who had died of puerperal fever. Soon afterwards, he exhibited symptoms that looked like those of the sick women and died. Semmelweis suggested that ‘cadaverous particles’ in the bloodstream could be the culprit.

After that, he made everyone wash their hands in a solution of chlorinated lime (a mixture of calcium hypochlorite and calcium hydroxide) before being allowed to examine the women in the maternity ward. This spectacularly reduced the number of deaths between May and August 1847 from 18% to less than 2%.

Jules Bordet (1919, A. B. Lagrelius & Westphal, Stockholm)

Ignaz Semmelweis (1860, Jenö Doby, Wikimedia Commons collection)
is only found in animals that are already immune to the bacteria in question. The second, called ‘alexine’ or ‘complement’, is an element that appears in all animals. Thus, Bordet became the father of ‘serology’ or, in other words, the study of the humoral immunity that is contained in body fluids. The ‘Bordet-Wassermann’ test from 1906, which was used for a long time to see if a person had come into contact with such pathogens as those causing typhus, tuberculosis or syphilis, is based on this principle.

Building further on that discovery, Bordet also demonstrated that the antibodies make a distinction between different species of animals. With this he proved that zoological diversity is based on chemical molecules that are characteristic of each species. It also appeared that, within one and the same species, antibodies from one individual can recognise molecules that are present in a certain number of other individuals. That led to the discovery of blood groups, and forms the basis for today’s transplant medicine.

In the end, Jules Bordet stayed for seven years in Paris. During those years, he travelled to South Africa at the request of the Pasteur Institute, where rinderpest (cattle plague) was decimating herds. There, Bordet recommended immunisation with serum, which soon resulted in the extermination of the disease. He also made the acquaintance of Robert Koch while he was there.

In 1901 he returned to Brussels to continue his work in the recently established ‘Anti-Rabies and Bacteriological Institute’.
The Pasteur Institute of Brabant joins the battle against infectious diseases. 110 years of working towards a healthy life for all.
II: The Pasteur Institute of Brabant joins the battle against infectious diseases

Jules Bordet and the Pasteur Institute of Brabant

On 15 March 1900, the Brabant Provincial Council decided – at the proposal of two influential councillors (Janssen and Monville) – to establish an ‘Institute for Serotherapy and Bacteriology’, which initially consisted of two quasi-autonomous entities: a ‘(provincial) Institute for Serotherapy’ and an ‘Anti-Rabies and Bacteriological Institute’. “Back in Brussels in 1901, Jules Bordet became the head of the Anti-Rabies and Bacteriological Institute, which was provisionally accommodated at the premises of the ‘Institut de Physiologie Solvay’ (Université Libre de Bruxelles). In 1905, the institute – which had already been re-baptised the ‘Pasteur Institute of Brabant’ in 1903, with the permission of the late Louis Pasteur’s wife – moved to the rue du Remorqueur in Brussels. The serotherapy department was fully merged with the Pasteur Institute in 1908.
In 1906, Jules Bordet and Octave Gengou – who, with Lucien Hauman, formed the first scientific team at the Pasteur Institute of Brabant – discovered the bacterium responsible for whooping cough. This bacterium was eventually named after its discoverers: the Bordet-Gengou bacillus or *Bordetella pertussis*. Bordet also discovered the bacterium that caused avian diphtheria and the mycoplasma that gave cattle pleuropneumonia. He described various immunological mechanisms that were previously unknown, became interested in the coagulation of the blood and launched himself into the study of bacteriophages. The discovery of the bactericidal properties of phages and their mutually different preferences for certain kinds of bacteria formed the basis of a method that was used for many decades to identify and typify bacteria.

However, the First World War greatly delayed the research. This encouraged Jules Bordet to write his “Traité de l’Immunité dans les maladies infectieuses” [*Treatise on Immunity in Infectious Diseases*]. It would be the standard work on the subject for more than thirty years.

For his ground-breaking research into immunity, he was awarded the Nobel Prize for Physiology and Medicine in 1919.

Bordet retired in 1940. He was succeeded by his son Paul as head of the Pasteur Institute of Brabant and as Professor of Bacteriology at the *Université Libre de Bruxelles*.

In line with the zeitgeist and the activities of the parent institute in Paris, the Pasteur Institute of Brabant focused on research, diagnostics and the treatment of infectious diseases. The organic regulations of 1989 mention four objectives: the first was the pursuit of scientific research into infectious diseases; the second core activity was the treatment of people infected by rabies and the diagnosis of rabies in dead animals. The preparation of immunising products (serums and vaccines) was the third objective. In addition, the institute
(like the provincial laboratories) carried out bacteriological and serological analyses on tissue samples, at the request of local doctors, and it was responsible for the chemical and bacteriological analysis of drinking water. Those main objectives remained more or less unchanged for eight decades.

Uniquely for Belgium, the Pasteur Institute conducted research into rabies, the virus that caused ‘mad dog’s disease’. It was also responsible for diagnosing the virus in people and animals, and for producing rabies vaccines. Patients infected with rabies could be treated free of charge at the institute, which was something new for our country. After all, they previously had to go to Lille or Paris for treatment. The last case of rabies in a human being occurring in our country was in 1926. Since then however, there have been a number of sporadic cases of people who became infected abroad.

In the 1980s, there was an outbreak of rabies in animals. Two intensive oral vaccination campaigns among foxes, in 1989 and in 1998, resulted in Belgium being officially declared free of rabies in 2001 by the World Animal Health Organisation. The Pasteur Institute, which had been fighting the disease for more than a century, made a vital contribution to this success.

Treating infections with serums and vaccines

On the eve of the First World War, two serums were used to fight infectious diseases: one against diphtheria (developed by Behring and Roux in 1889) and one against tetanus (Roux and Vaillard, 1892). They were produced from blood taken from immunised horses. There were two vaccines available in addition to serums. Pasteur’s
vaccine against rabies, and a vaccine against typhus, developed by Wright in 1896, which was also used during the war to vaccinate soldiers on the battlefield.

After the war, vaccine and serum production at the Brabant Pasteur Institute was accelerated. After the anti-rabies and anti-diphtheria serum, the preparation of typhus and gonococcal vaccines started in 1914. In 1919 followed the Bordet-Ruefflens antigen. After that came the whooping cough vaccine and diphtheria antitoxin (1926), and the BCG vaccine against tuberculosis (1930). The latter was used intensively in the mid-1950s in a vaccination campaign against TB in Belgium and in the Belgian Congo. The year 1934 saw the production of tuberculins, and 1935 that of the anti-tetanus serum. Finally, the tetanus antitoxin followed in 1936, the anti-gangrene serum in 1942 and the staphylococcus and cholera vaccine in 1948.

A period of growth and renewal

After the Second World War, the Pasteur Institute – where Jules Bordet was succeeded by his son Paul as Director in 1940 – started having problems with an acute shortage of space. The expansion of the serum and vaccine department was demanding ever more space and new services were being created as science advanced and the number of samples for analysis increased. Thus, for example, the ‘Analyses’ department was expanded to include a laboratory for tuberculosis and a lab for toxoplasmosis. The latter was instigated by Frans De Meuter, one of the later successors of Bordet as Head of the Institute. Then there came the National Centre for Phage-typing and Enterobacteria (1951), which focused on the detailed identification of food pathogens and other disease-causing bacteria.

In 1952 a virological laboratory was set up under the directorship of Lise Thiry, who some decades later would become an adviser to various ministers of Public Health. The lab would develop diagnostic techniques, and carry out virological and serological analyses for hospitals and clinical laboratories. Expertise was available on a wide range of viruses, including some responsible for a number of serious infant diseases (measles, scarlet fever/German measles, mumps, chicken pox and poliomyelitis) and a series of viruses that cause respiratory infections (including influenza virus, respiratory syncytial virus and adenoviruses). The laboratory consequently also took on the role of a reference laboratory, particularly for identifying viruses that are difficult to typify.

At the beginning of the 1970s, the institute, now headed by Jacques Beumer, had grown to three fully-fledged departments. The production department at that time focused almost entirely on vaccine production. Serotherapy – or in other words, the use of serum extracted from the blood of animals (often horses) that had been immunised against certain pathogens – was largely left idle, due to the better availability of human
110 years of working towards a healthy life for all

In addition to the production of actual vaccines and tuberculin, which was used for detecting tuberculosis in people and cattle, this department was also responsible for filling the vials (the so-called ‘sous-tirage’) and monitoring the quality of the vaccines. The production and monitoring technology was, like the vaccines themselves, greatly modernised from the 1970s onwards. The evolution in production techniques, the new regulations and the rising costs of clinical testing were however making the production of vaccines increasingly less profitable. For this reason, the Province of Brabant decided in 1987 to close the production department and hand that activity over to the pharmaceutical industry.

The ‘Analyses’ department, which was already tackling toxoplasmosis, rabies (still with preventive treatments in addition to analyses), tetanus, botulism, and the serological diagnosis of bacterial diseases such as syphilis and whooping cough, turned its attention to research into mycobacteria at the beginning of the 1980s. This was because of the discovery that the BCG vaccine, which consists of weakened Mycobacterium bovis bacteria, has an anti-tumoral effect on certain cancers. Nowadays, the vaccine is still being used to treat superficial bladder cancer in humans and (benign) skin tumours in horses. Another discovery worthy of note is that of the $M. bovis$ BCG ‘antigen 85A’ in 1989, which appeared to offer protection against tuberculosis.

The virology lab too had grown to become a stand-alone department, which in addition to the previously mentioned viral analysis also turned its attention to cancer research, retroviruses and the study of interferon – the latter because of its anti-viral properties. Jean Content, one of the later directors of the Institute, succeeded, together with the universities of Ghent and Leuven, in isolating those fragments of the genetic material that code for interferon-ß and interleukin-6. The first is nowadays used in treating Multiple Sclerosis, among other things. The second plays a role in inflammatory reactions, for example as a reaction to an infection.

AIDS IN 1980s

At the end of the 1970s, an unknown disease appeared on the world stage – first in the USA and then in Europe – which destroyed the immune system of patients. The virus (HIV) that was responsible for this was discovered in 1983. In that same year, Lise Thiry set up a department in the Pasteur Institute to study this new phenomenon, AIDS.

At that time most of the patients were male homosexuals, and the perception arose that it was a disease peculiar to that social group. Shortly afterwards, in 1984, Nathan Clumeck – a virologist at Saint Peter’s Hospital in Brussels, noticed that something wasn’t right. Various patients had been admitted to the hospital with the same symptoms as those described among male homosexuals. However, most of them were heterosexual and what was more, about half of them were women. The AIDS lab at the Pasteur Institute set to work on the problem and succeeded in isolating the HIV virus from the samples taken from the hospital and thus confirmed the diagnosis.
At the end of the 1970s, the institute’s laboratories began converting themselves into specialist national reference centres. In those days, advances had enabled the clinical labs in the field to take over ever more routine diagnoses, so that activity became less relevant for the institute and – apart from rabies diagnosis – it gradually died out. The impetus for this new focus was very soon given with the recognition of the lab for viral hepatitis as a reference lab to the World Health Organisation in 1979. That same year the laboratories for toxoplasmosis and viral diseases were also recognised as national reference labs. They were followed in 1983 by the laboratories for mycobacteria and tuberculosis, and in 1988 by the AIDS lab.

The vicissitudes of building

During the 25-year directorate of Paul Bordet, the institute grew exponentially. That can be most clearly seen in the staffing figures: in 1940 there were 20 people on the staff, of which 5 scientific employees. By 1950 there were 10 staff members on the scientific team and 15 years later the number had doubled again to 19 scientists out of a total of 140 employees.

Those expansions made the need for additional space all the more pressing. In response, the Province of Brabant decided around 1950 to purchase a plot of land in Verrewinkel (Uccle), where a new building would be erected. While waiting for this new building, temporary structures were erected next to the building in the rue du Remorqueur, in order to create additional space. By the end of 1972 the basic structure of the new building was up, but the finishing continued to drag on. In 1981, the staff had finally had enough of the continuing problems with the building project and they drew the attention of the provincial authorities to the situation with a rather carnival-like demonstration. One year later, the first services (virology department) moved to Uccle. In 1989, the last service closed the door in the rue du Remorqueur behind it. The temporary buildings, which were originally envisaged for 5 years, had by that time been in use for 30 years...

From that moment on, it was clear that there was a need in our country too for diagnostic tests for this new disease. Consequently, the AIDS lab would over the following years develop methods for detecting HIV infections. For example, in 1988 it perfected a test for identifying the HIV-1 pro-virus in lymphocytes, which signified a clear diagnostic improvement. In that same year, the laboratory was recognised as a national reference centre.

Three years earlier, Thiry made another important discovery about the virus. One of her former students was working in Kigali (Rwanda), where he noticed an apparent transmission of the disease from mother to suckling infant. It was already known that the HIV virus was not very easily transmitted during childbirth, so they had to look elsewhere to pinpoint the cause for this. The answer was not long in coming: after analysing the samples from Kigali, the virus was identified in the mothers’ milk.

Staff demonstration in 1981 against the endlessly unfinished ‘finishing’ work for the new buildings (©WIV-ISP archives)
Saint Michael

With the Saint Michael agreements, Belgium formally became a federal State. At the institutional level, one of the consequences of this was the split-up of the province of Brabant into a Flemish and a Walloon section (1995). The province of Brabant, which hitherto controlled the Pasteur Institute of Brabant, consequently decided to hand over the institute to the Federal Government. Thus, the Institute came under the authority of the then ministry of Public Health, Environment and Social Integration, and was renamed the Pasteur Institute of Brussels. In 2003, the Pasteur Institute was merged with the Institute for Hygiene and Epidemiology (IHE). Originally, it was a semi-autonomous department within this new fusion-institute. Four years later the ‘Bacteriology’, ‘Mycology’ and ‘Virology’ sections of the IHE ‘Microbiology’ department, and the ‘Bacteriology’, ‘Molecular Microbiology’, ‘Mycobacteriology’ and ‘Immunology and Rabies-Parasitology’ sections of the ‘Pasteur Institute’ department were transformed into the operational directorate ‘Communicable and Infectious Diseases’ of the present Scientific Institute of Public Health’
The increasing attention to hygiene leads to the establishment of a Central Laboratory.
At the end of the 19th century, the work of Koch and Pasteur provided new understanding about the connection between microorganisms and diseases. As a result, the importance of hygiene steadily gained a foothold in Europe. However, it would be some years before that would be seen at the grassroots level. In 1892, at the time of the last major cholera epidemic in Belgium, there were only 11 autoclaves and 28 dry ovens for sterilising medical instruments in the entire country. However, the new scientific knowledge was beginning to make people realise that the diagnostic and preventive possibilities of the country had to be applied to those recent discoveries. Thus it was that a number of provinces established their own health laboratories.

Worries about the World Exhibition of 1897

On the occasion of the World Exhibition of 1897 in the Parc du Cinquantenaire in Brussels, the national government decided – partly from fear of a new cholera outbreak – to set up a department of hygiene, where the modern approach to infectious diseases and the related equipment could be shown to the general public.
This department, which many decades later would grow to become the Institute for Hygiene and Epidemiology, was first mentioned in official documents in 1904 as the “Laboratory for Hygiene of the Ministry of Internal Affairs”, later also known as the “Central Laboratory for Hygiene”.

The management of this lab was entrusted in 1905 to Maurice Hencesval, an old school educated medical doctor, who was driven by the new bacteriological knowledge. After his career at the Central Laboratory, he was appointed professor of bacteriology and hygiene in 1920 at the State University of Ghent.

In the Central Laboratory, Hencesval was able to surround himself with highly dedicated staff. Two of them, Richard Bruynoghe and Albert Bessemans, would go on to play an important role in the medical and academic world. Bruynoghe, also a bacteriologist, was Hencesval’s deputy from 1908 to 1911.

The Central Laboratory had already been expanded in 1907 with the bacteriological department at Gembloux. In those years, the laboratory won its spurs in the fight against plague and cholera, the horror stories of that time. Thus, Richard Bruynoghe isolated himself in 1910 for two months in the quarantine station of Fort Liefkenshoek, to nurse – together with Dr. Convent (the first health inspector of the Dutch-speaking regions) – the plague victims from the ship ‘Rubens’. The following year, a cholera epidemic originating in Rotterdam broke out in Willebroek. This outbreak would be the last death spasm of this dreadful disease in our country. It was once again through the efforts of Bruynoghe, to whom the care of the patients in the hospital in Boom was entrusted, that it was possible to limit the outbreak to a ‘mere’ 145 fatalities.

Bruynoghe made use of his three-year sojourn at the Central Laboratory to modernise the bacteriological diagnosis and serotherapy of epidemic meningitis. After that, he would go on to hold the chair of bacteriology at the Catholic University of Louvain for another four decades.

Albert Bessemans, for his part, was the health inspector of Limburg and established the bacteriology laboratory in 1913 in Hasselt. Shortly after that, he used anti-typhus vaccination for the first time during a typhoid epidemic in Koninksem. In 1922 he became Deputy Director of the Central Laboratory. A few years later, in 1924, he began his academic career at the State University of Ghent. He started off as a lecturer at the Faculty of Medicine and was given the directorship of the Hygiene and Bacteriology Laboratory there in 1926. In 1933, he became Rector of the university.
Hygiene becomes ever more important

Between 1880 and 1940, life expectancy rose by about two to three years per decade to an average age of 56 among men and 62 among women born in 1940. The mortality figures fell in virtually all age groups, but children and young adults especially were doing particularly well. In 1879, 30% of the population were still dying from infectious diseases, but by 1940 that figure had dropped to about 10%. This was largely due to the drop in the number of fatalities from infectious diseases, thanks to better hygiene conditions and better food among a large section of the population. The idea of ‘prevention is better than cure’ was winning increasing popularity. Thus, from the second half of the 19th century onwards, various private initiatives were issuing warnings about all manner of dangers, ranging from infectious diseases to alcoholism. Others, such as the Belgian National League against Tuberculosis, focused on the prevention of TB, or even cancer (which at that time was still considered to be an infectious disease). In light of all that, various inspection services were established, including the health inspectorate (1845), the inspectorate of foodstuffs and that of the pharmacies (1893). After the hardships and horrors of World War I, attention to prevention and hygiene flourished; indeed, it was even considered as a moral duty, to protect the nation and one’s family. In its turn, that was the principle underlying the creation of bodies such as the National Work for Child Welfare (1919).

In the spirit of those times, the tasks of the Central Laboratory also increased in number and importance. In 1920, after Henseval had left for the University of Ghent and some years later after the expansion of the central lab with the bacteriological department at Gembloux, Louis Van Boeckel took over as head of the Central Laboratory. In 1931, Van Boeckel became the first health inspector of West Flanders, where he set up a provincial lab, by analogy with his later deputy Albert Bessemans in Limburg. He expanded the Central Laboratory further by persuading a number of pharmacists to put their expertise at the service of the laboratory and starting a chemistry department. Some years later, in 1929, the lab for the pharmaceutical inspectorate was established. However, in 1928 the Central Laboratory was abruptly decapitated. The 42-year-old Van Boeckel was felled by cancer and Bessemans too, who during his career had published more than 600 scientific papers (unheard of at that time), left the lab to succeed Henseval as head of the Hygiene and Bacteriology Laboratory at Ghent University.

At the beginning of 1929, the Central Laboratory came under the leadership of Frans Van den Branden, the former head of the laboratory in Leopoldstad (now Kinshasa). He was the first Director who no longer belonged to the brigade of health inspectors. This instigated the later split between inspectorate and laboratory responsibilities and a basis was formed for the subsequent autonomy of the Institute for Hygiene and Epidemiology, which would become the successor of the Central Laboratory. During the directorship of Van den Branden, which ran until 1942, a number of new departments came into being. In addition to the aforementioned lab for the pharmaceutical inspectorate, the gradual integration commenced of the labs for the foodstuffs inspectorate and the State Vaccine Institution. The latter was established in 1882 at the School of Veterinary Medicine in Anderlecht to produce and distribute cow-pox vaccine.

An expansion of the focus and of the Central Laboratory

When the Central Laboratory first came into being, the focus was purely bacteriological, but, as time went by, it was given new tasks, such as the study of infectious diseases, the monitoring of the vaccines against smallpox, typhus and paratyphus, and the monitoring of the diphtherial antitoxin and the arsenobenzines prescribed at government expense (for treating syphilis). In addition, the laboratory kept and distributed the anti-polio serum and was responsible for distributing calibration samples for hormones and vitamins. The lab also studied and monitored the disinfectants that were coming on to the Belgian market, as well as the disinfection equipment and procedures. It also supervised the elimination of lice and rats. In addition, it worked on water quality, the purification of sewage and, by extension, all the hygiene issues that fell within the competence of the health administration. Finally, it also functioned as a laboratory for the sanitary station of the Lower Scheldt, the quarantine field hospital at Doel and the health inspectorate of Brabant.

Two years before the appointment of Van den Branden as Director, his later successor Paul Nélis joined the ranks of the Central Laboratory. He would go on to complete the integration of the various external labs into the Central Laboratory.

The first step to this end was taken on 28 February 1946 with the establishment of the Inspectorate of Laboratories, of which Nélis became Chief Inspector-Director. This structure brought a number of important laboratories together. Thus, a regrouping took place of the Central Laboratory, the former laboratory of the foodstuffs inspecto-
rate, the State Vaccine Institute, and the sewage analysis laboratory, which was created during the Second World War. To these was added the meat products inspectorate laboratory, as were the national health inspectorate laboratories in Libramont, Hasselt, Brugge, Ghent, Charleroi and Luik. With this merger, the laboratories were separated administratively from the health inspectorate. Around 1950, the organisation chart of the Laboratories Inspectorate looked like this:

- The central laboratory for bacteriology and hygiene
- The central laboratory for physics, chemistry and sewage analysis
- The laboratory of the pharmaceutical inspectorate, later renamed the laboratory for medicines research
- The laboratory for foodstuffs research and the State Vaccine Institute, both located in Anderlecht
- The laboratories for meat product research and virology
- The provincial Laboratories of Bruges, Libramont, Antwerp, Liege, Hasselt, Ghent and Charleroi

Meanwhile, the lab in the Parc du Cinquantenaire was bursting at the seams. The temporary pavilion was in fact already too small shortly after the establishment of the Central Laboratory. From 1930 onwards, Maurice Henseval – and after him another three successors – made various attempts to find new accommodation, but on every occasion they were turned down. Finally, it was Nélis who succeeded. In April 1948, the Spaak III government decided to erect a new building on Rue Juliette Wytsman. Nélis himself did not live long enough to see it happen – he died in 1952. It was his successor, Alphonse Lafontaine, who followed the construction work and ensured the move to the new building went smoothly. Between 1953 and 1957 all the departments moved into the new building, which was officially inaugurated on 16 December 1957 by Edmond Leburton, the then Minister of Health and the Family and Omer Vanaudenhove, who was Minister of Public Works and Reconstruction.

A VISIT WITH LONG-AWAITED CONSEQUENCES

During his speech on the occasion of the inauguration of the new building, Dr. van de Calseyde, Director of the World Health Organisation’s European Regional Office, and a former Director-General at the Ministry of Health and the Family, related the following anecdote on the visit of Minister Alfons Verbist in 1948 to the Central Laboratory in the Parc du Cinquantenaire:

“The Central Lab had been operating for 50 years in the Parc du Cinquantenaire in temporary premises, in the administrative sense of the word. Those buildings, of which Minister Wauters had already declared in 1937 that they were not really healthy, and their dubious comfort elicited from Minister Verbist the words “Vous faites de l’hygiène sans hygiène” [“You are working on hygiene in unhygienic conditions”]. Those words undoubtedly produced the spark needed to rouse the government from their slumbers, and which enabled a plan to be implemented that had long been envisaged and cherished. I am referring to the plan to accommodate all together in a new building the pharmaceutical laboratory, the foodstuffs lab, the State Vaccine Institution and the sewage purification institution, together with the Central Laboratory for Hygiene – all of which had been badly housed in the capital.”
110 years of working towards a healthy life for all

The Institute for Hygiene and Epidemiology, scientific foundation of health policy
A new name and a greater role in prevention

Five years after combining the laboratories together into one institute, and three years after the government decided to give it its own home, the Institute also got a new name. On 24 November 1951 King Baudouin signed the Royal Decree establishing the ‘Institute for Hygiene and Epidemiology’ at the Ministry of Health and the Family.

In addition to a Virology department, in the first half of the 1950s the IHE – with the establishment of a ‘Department for monitoring biological products’ and the ‘Research lab for the Pharmacopoeia and the national standards’ – was also given a major role to play with regard to standards and regulations. In addition to screening, awareness-raising and vaccination, that is one of the four principal pillars of today’s preventive health policy. Around 1958, the IHE had an important monitoring function in three domains.

Thus, it supervised (as it still does) ‘therapeutic remedies’, and more specifically the safety and effectiveness of vaccines and serums for use in humans, the quality and conformity of antiseptics, surgical suturing material and wound dressings, and the quality of medicines and magistral preparations. The institute also focused on the quality of foodstuffs and additives. This included such activities as the chemical and biological testing of drinking water and the monitoring of sewage and contamination of rivers and streams.

Modernisation through social progress in the 1960s

On the eve of the 1960s, social progress was in the air. In 1959 the five-day working week was introduced, which was the symbol par excellence of social progress in the ‘golden sixties’. In the same year, the law on the School Pact came into effect. One of its important provisions is the elimination of registration fees for secondary education, thus allowing more people access to continued education. At the same time the Unity law (law on economic expansion) was in preparation, as a reaction to rising unemployment and national debt in that period. These developments resulted in the following years in increased ‘brain circulation’ in the population.
Dr Samuel Halter, then a Director-General at the Ministry of Health and the Family, was fully aware that the government departments would have to adapt to the new social changes. In light of this, he unfolded a policy vision in 1959 to prepare the IHE for the future. A new structure within the institute and a reassessment of the scientific jobs with adjusted pay scales should provide an answer to the challenges the institute would soon face. The lab chiefs were given the task of devising a concrete programme to give the term ‘scientific personnel’ a solid and attractive shape. The introduction of an autonomous framework with promotion possibilities for scientific staff played an essential role here.

The need to push through this modernisation project came much sooner than expected. The turbulent situation in the Congo after its independence in 1960 resulted in the return of many colonials to Belgium. This in turn resulted in a number of leading laboratory specialists suddenly being added to the IHE. One of the most famous of them was Eugène van Oye, the former head of the ‘Princess Astrid’ Institute of Tropical Medicine in Leopoldstadt (Kinshasa). Because of the influx from the Congo and a series of new recruitments, the number of scientists in the institute rose from 12 in 1952 to 80 in 1968, out of a total staff of 140 people. Director Lafontaine had his hands full with this expansion, but at the same time the acquisition of experienced scientists from the Congo was also an excellent opportunity for the institute to focus on new domains. After all, some of them had been working on subjects that were not such familiar territory for the IHE, such as radioactivity, for example.

The reform programme would ultimately acquire the power of law under a Royal Decree of 6 March 1968, whereby the IHE was established as a ‘Scientific institution of the State’. After this transformation, the IHE consisted of three departments. The ‘Environment’ department had four sections (‘Air-Atmosphere’, ‘Water’, ‘Ionising radiation’ and ‘Noise’). The tasks were largely the same as those of the earlier Chemistry and Physics Lab: studying chemical and radioactive contamination, the biological consequences of it and the ways of dealing with that contamination. In those years, technology was also making great strides forward. For example, the measuring network used for checking air quality (nowadays run by the Inter-Regional Environmental Unit) was set up in 1967. In 1958 a calibration network was initiated to monitor radioactivity in the air. That was the predecessor of the present Telerad (Federal Agency for Nuclear Control).

The second department – Microbiology – grouped together the activities of the earlier Bacteriology and Monitoring Lab, those of the Virology Lab, the State Vaccine Institute, and the Leptospirosis Lab, and the National Reference Centre for Salmonella and Shigella. The bacterial section focused mainly on the epidemiology of diseases such as diphtheria and syphilis, and on the control of microbial contamination in food products. The virology lab studied the spread of viruses in the surroundings of sick people and in schools. Both labs also monitored the quality of vaccines and antigens for human consumption. The State Vaccine Institute was still producing cowpox vaccine and also carried out tests to detect pox infection. In 1960 the National Reference Centre for Salmonella and Shigella was established at the request of the World Health Organisation, which recommended installing a permanent surveillance for such infections in every country.

Finally, the ‘Pharmacotoxicology’ department comprised five laboratories. One of the oldest ones was the lab for analysing medicines. The more recent laboratory for research in the service of the Pharmacopoeia and the ‘National Standards’ operated along the same lines. Because of the sharp rise and the variety in the number of new medicines, the need to be able to identify them and check their quality also grew. Two other labs in this department – the lab for analysing meat products and the lab for analysing foodstuffs – focused on the chem-
ical and biological quality of food. The last lab in the department was the one for biology-physiology. This one focused mainly on research into hygiene and prevention in the widest sense of the word, ranging from the analysis of pesticide residues in foodstuffs to developing tests for determining the level of alcohol in blood.

A double assignment and a full-fledged epidemiological section

With the transformation to a State scientific institution, the Institute for Hygiene and Epidemiology simultaneously became a scientific institution and an institute of public benefit. It not only had to investigate all the factors that ‘adversely affect the health and wellbeing of people’, and ‘the way in which they can be prevented, combatted and eliminated’, but it also had to ‘apply the acquired knowledge to the epidemiological terrain’.

But then there was a bit of problem. The name of the institute included the word ‘epidemiology’ and there was a department with that name, but in practice it was occupied with coordinating and managing the laboratories of the IHE in the provinces. So real epidemiological research remained rather limited. However, people came to realise that the IHE, in addition to functioning as a national laboratory, also had to conduct scientific research as the basis for health policy. After all, the institute possessed, more than any university institution, a mass of observation data on various subjects, on which hardly any epidemiological research had been done. Director Lafontaine was very much aware of that lacuna. The year 1976 – with the arrival of Godfried Thiers at the IHE – would show the green light for the establishment of a full-fledged epidemiological department. The first real epidemiological project was launched in 1979, with the establishment of the so-called Network of vigilant GPs, a network of General Practitioners who report all kinds of health problems among the population, by which we can study their extent and their most significant epidemiological characteristics. It also makes it possible to follow up a number of health problems in time (e.g. varicella, influenza) so that the impact of vaccination and prevention campaigns can be observed. Later, there followed the Sentinel Labs, a network of corresponding laboratories that enable us to collect reliable information about the incidence of infectious diseases. Today, more than thirty years later, those networks are still an important pillar of our epidemiological activities.

More attention to the environment and health

Now that infectious diseases had largely been conquered, the focus of the international community is turning increasingly towards the environment. The first conference on the environment, which was held in Stockholm in 1972 (and in which Lafontaine had participated), was the initiative that spurred on the growing interest in the environment that started around the middle of the 1970s. The conference resulted in an agreement on a series of principles on the environment and development, and a plan of action with 109 points was drawn up. That had a direct influence on international environmental policy. Thus, the United Nations drew up a programme for the environment, on which Lafontaine collaborated as manager. The conference also brought about changes in the European view of environmental policy. One of the concrete consequences for the IHE was that the Water and Air departments were considerably expanded.

By the middle of the 1980s the IHE had become a major player in the field of environment-related scientific expertise in Belgium. Thus, the institute had a whole arsenal of measurement networks and monitoring ac-

**FIRST POPULATION SURVEY ON THE INFLUENCE OF ENVIRONMENTAL POLLUTION ON PUBLIC HEALTH**

At the end of the 1970s, the people living in the vicinity of the Bayer-Rickmann factory in Bruges were deeply angered by the pollution of the air by fluorides. In 1977 researchers from the IHE investigated the consequences of the fluoride emissions for the residents. They found significantly more frequent mottled tooth enamel among schoolchildren in the neighbourhood. That same year, the company reduced the emissions. This study was one of the very first population surveys on the influence of the environment on public health in our country.
tivities, including those of air quality and radioactivity mentioned earlier. In that period, a surveillance system was also set up for detecting pollen and moulds in the air. The first, currently known as the Air Allergy network, has now been providing information for more than 30 years for hay-fever patients and doctors.

Another important measurement network was created in 1975, which monitors the chemical and biological quality of surface waters. Still water-related was the systematic monitoring and analysis of groundwater (1977). The water of the North Sea was also tested, about 10 times a year, by sampling campaigns at sea. With the advent of water purification installations and dredging works in rivers, the problem of polluted silt arose, on which the institute kept an eye.

In 1986 the IHE was given another department, with the accretion of the ‘Management Unit for the Mathematical Model of the North Sea and the Scheldt Estuary’. This department developed models to monitor the impact of pollution and industrial activities on the marine environment.

In 1976, in addition to the traditional environmental themes, the IHE was presented with a totally new, red-hot topic. Genetics were undergoing a downright revolution, due to the development of techniques for making recombinant DNA. As a result, a ‘biotechnology and bio-safety’ section was created. Since then it has been monitoring the problem of genetically modified organisms and it has been advising policymakers and administrations on this subject.

THE DUMP AT MELLERY

“ In the 1980s, hundreds of thousands of tons of chemical waste from the Netherlands were being dumped close to the Walloon-Brabantian village of Mellery. Industrial waste full of heavy metals and chemical substances that were a danger to people’s health was disappearing into the sand quarry of ‘Les Sableries Réunies’. In 1987 the matter caught the attention of OVAM [Flemish government agency dealing with waste materials], the Antwerp public prosecutor and the press, and the ball started rolling. In spite of confirmed violations and consternation from the public, the dump remained open until 1989. That was the year in which the Basel Convention was drawn up to tighten control over the international transportation of waste materials.”

In the following years, the IHE carried out a survey of those living in the vicinity of the dump, and this showed that the gas emanating from it, to which they had been exposed for years, had caused genetic defects, with increased likelihood of cancer as a result.

This survey caused quite some furore in Belgium and Holland. As a consequence, the Federal Minister of the Environment in 1993 decided to declare the houses near the dump unfit for human habitation and the Walloon government started cleaning up the dump.
Scientific support for health policy

The IHE was now no longer a small institute. The earlier tasks of monitoring the quality and safety of food products, medicines and cosmetics, as well as those of serums and vaccines, were supplemented with checks on the quality of water and air. The expansion of the monitoring networks and research activities that were needed for them, and the expansion of epidemiological research into new domains such as drug-use and food poisoning, in addition to traditional infectious diseases, meant that the institute was in possession of huge amounts of data that were especially relevant for policy makers. The IHE was thus increasingly able to distinguish itself as the scientific reference in Belgium as regards public health, which on the one hand policy could build on, but which the medical world could rely on as well. After all, by that time the clinical laboratories in the country had developed to such an extent that they were able to carry out increasing numbers of routine disease diagnoses. There was therefore less need to carry out such diagnoses in a central laboratory, and the focus turned towards expanding reference laboratories with specialist expertise – for example, for detecting rare diseases or those that are difficult to confirm (such as for enterovirus infections) – and toward monitoring important pathogens (such as polio and influenza). Because of this evolution, the raison d'être of the Institute’s provincial antenna-labs gradually disappeared. The antennas were thus closed down in 1987.

Time for serious institutional reform

At the start of the 1980s, Premier Wilfried Martens put through a national reform whereby a series of powers were devolved from the national to the regional level (communities and regions). During that period (1983), Godfried Thiers took over the reins at the IHE from Alphonse Lafontaine, who retired. He was given the heavy task of steering the IHE through turbulent seas.

ANTIBIOTIC RESISTANCE: A NEW CHALLENGE FOR PUBLIC HEALTH IS REARING ITS HEAD

The increasing resistance of bacteria to antibiotics is a worldwide problem for public health. Bacteria are said to become resistant to a particular antibiotic if the maximum dose that a patient can tolerate is no longer sufficient to impede their growth. The first reports of methicillin-resistant Staphylococcus aureus (MRSA) in hospitals in our country date from the early 1980s. Therefore, drug-resistant bacteria are not a new phenomenon, but since then the number of bacterial strains that have become resistant to one or more antibiotics has grown alarmingly.

In the mid-1980s, the IHE had already conducted an investigation into hospital acquired infections, and it issued recommendations on the use of antibiotics. In 1992 those studies became a permanent programme. In order to be able to monitor the problem of increasing resistance better, a permanent national MRSA surveillance service was set up in 1994. Over the years, that monitoring activity has been extended to various other resistant bacteria.

In addition to the surveillance section, both the IHE and the Pasteur Institute have contributed to the research into resistance mechanisms. The IHE focused on meningococci, notorious for causing certain forms of infection of the cerebral membrane (meningitis). Since the beginning of this century, the Pasteur Institute has accommodated the national reference centre, which is investigating mechanisms of resistance to broad-spectrum antibiotics by Streptococcus pneumoniae. This organism is a major cause of lung infections, ear infections and bacterial meningitis.
Regionalising environment and water policy

With the amendment of the special law on reforming the institutions on 8 August 1988, the regions were among other things given authority for matters concerning the environment and water policy. So, from that date onwards, they had to assume responsibility for protection of the soil, the subsoil, the water and the air against pollution and contamination, as well as for the battle against noise pollution. Other tasks that were previously tackled at the national level – such as waste policy, surveillance of hazardous, unhealthy and harmful industries and supervision of the quality of drinking water and sewage – now came under the responsibility of the regions.

The activities of the ‘water’ and ‘air’ departments at the IHE were directly related to these tasks, and the consequences were soon felt at the institute. With the approval of the law on financing the regions and communities in 1989, 40% of the IHE’s budget was siphoned off to the regions and communities. In 1993 the two departments were entirely dismantled. The direct cause of this were the plans of the Brussels Regional Development Society for the former military Hospital in Ixelles, where these departments were housed. Since responsibilities for matters concerning the environment and water policy had been devolved to the regional level, it was decided to transfer the staff and the equipment to the regional level as well. In concrete terms, the activities of the water department were divided between the Flemish Environment Agency, the Flemish Institute for Technological Research, the Brussels Institute for Environmental Management and the Walloon Public Service Scientific Institute. The air department was regionalised, but immediately raised back to national level with the establishment of a new Inter-Regional Unit for the Environment (IRCEL-CELINE). After all, air pollution is no respecter of regional borders, so collaboration was essential. In 1997 the ‘Management Unit for the Mathematical Model of the North Sea and the Schelted Estuary’ was transferred to the Royal Belgian Institute for Natural Sciences for the purpose of setting up an expertise pool for protection of the sea.

Towards a merger with the Pasteur Institute of Brabant

With the federalisation of the Pasteur Institute of Brabant, the Ministry of Health suddenly found itself with two separate scientific institutes that were working on the same terrain. In spite of the partly-overlapping activities, the mission of each of the institutes was nevertheless fundamentally different. The IHE focused on epidemiological and policy-supportive research and scientific service provision, while the Pasteur Institute concentrated on investigating, tracking down and treating infectious diseases. Nevertheless, rationalisation was not long in coming, which would ultimately end up in a merger of the two institutes. In 1996, the first step in that process was taken with a change in the name from ‘Institute for Hygiene and Epidemiology’ to the ‘Scientific Institute of Public Health- Louis Pasteur’.

Earlier, in 1987, Guy Verhofstadt, the then Minister of Budget and Science Policy, had endowed the IHE with legal personality. This legal entity soon became an essential instrument to allow for an efficient management of the Institute. Until today, it is the basis of our contractual research, and it enables us to hire person-
The Scientific Institute of Public Health – science in the service of a healthy life for all
At the beginning of the 21st century, the landscape of the federal health policy was turned upside down by radical changes. One of the major policy points of the Verhofstadt I government was the modernisation of the federal public administrations. In that regard, a reform plan was sketched out – the so-called Copernicus Note of 16 February 2000. One of the consequences of implementing the Copernicus plan was that the federal ministries were transformed into ‘federal public services’ (FPS) and ‘federal public planning services’ (PPS). After the split-up of the Ministry of Social Affairs into the FPS Social Affairs and the FPS Public Health (2001), the regionalisation of Agriculture (2002) and the establishment of the Federal Agency for the Safety of the Food Chain (2000), new players appeared in the domain of public health. In 2003, the Federal Health Care Knowledge Centre (KCE) was established, followed by the Cancer Register in 2006 and the Federal Agency for Medicines and Health Products (FAMHP) in 2007. In parallel with these, the Veterinary and Agrochemical Research Centre (VAR) became part of the FPS Public Health.

In that period (September 2003), the merger of the former IHE with the Pasteur Institute of Brussels became a legal reality. The institute was then given its present name: ‘Scientific Institute of Public Health’ [Dutch-French abbreviation: WIV-ISP]. Before the law, there was a single institute, but in reality the Pasteur Institute was a semi-autonomous fourth department, which concentrated on studying infectious diseases and their immunological and vaccinological aspects. However, the focus was changed from ‘fundamental research’ to ‘research to support public health policy’.

The last major restructuring of the IHE dates back to 1968, when it became a federal scientific institute with a clear mission and structure. However, since then the institute had been given a whole series of new tasks, services and departments, after which two decades of national reforms have thoroughly shaken up the institute. The continual series of interventions, of which the merger with the Pasteur Institute was the most recent, have led to a complicated, rather inconsistent tangle of sections and units without a clear common theme. A thorough reflection on the role, mission and priorities of the institute within the reshaped Belgian health landscape was therefore needed urgently. That materialised between 2005 and 2006 in the so-called Jenner Project, headed by Johan Peeters (at that time President-Director of the VAR), in which the entire philosophy, organisation and positioning of the WIV-ISP (and that of its sister institute, VAR) were put under a magnifying glass.

It became clear quite soon that the WIV-ISP was in urgent need of a rationalisation of its policy support research and the scientific services it provided. For instance, highly complementary activities existed in both the former IHE and in the ‘Pasteur Institute’ department, which were continued separately after the merger. There was also a lot of room for improvement in handling administrative and technical matters, since central management was hampered by the scattering of expertise across the institute. The Jenner analysis gave rise to four new main objectives. The first one concerned WIV-ISP’s research, which should focus on projects that generate scientific and societal added value. That means they should help to improve the health status of the population. The institute’s clients, such as the communities and the regions, were considered another important point of attention, as our expertise and research has to be able to serve their needs as well. The other two objectives were related to the internal
organisation: operations had to be more efficient and the organisation had to become more effective, in particular regarding its support services and processes. A customised human resources policy and appropriate infrastructure also had to be put in place.

One of the first tangible results of the Jenner project was a new organigramme of the institute’s scientific units (2008). Units that belonged together in terms of activities and expertise were grouped, giving birth to four scientific directorates. All epidemiological and surveillance activities were gathered in the operational directorate ‘Public Health and Surveillance’. The former Pasteur Institute and IHE Microbiology departments joined forces in the new operational directorate ‘Communicable and Infectious Diseases’. The admission of the WIV-ISP as a whole into the international network of Pasteur institutes played a decisive role in forging this merger. The third operational directorate, named ‘Food, Medicines and Consumer Safety’, comprises our scientific activities on chemical quality and safety of medicines, foodstuffs and consumer products. The fourth operational directorate, ‘Expertise, Service Provision and Client Relations’, focuses on specialised quality control activities of vaccines, blood products, and medical labs. It also coordinates the scientific services we provide our partners with. The latter directorate is also the Belgian reference in terms of risk assessment of genetically modified organisms and supervision of their use. The reform was concluded by the reorganisation of the scientific council and the establishment of an advisory board to each directorate. Their role is in strategically orienting the conducted research and in watching over the quality of the scientific programmes.

Because of the Jenner project, the restructuring of the WIV-ISP (as of 2006 headed by Johan Peeters), and the reorganisation of its operations gained speed. The structures that dated from past times were adapted to the needs of a modern and innovating organisation. Not an easy task, considering the simultaneous budget cuts imposed by the federal government. The institute tackled the budgetary difficulties by further improving its operational efficiency, by shifting towards specialised staff, and by introducing new career paths. The first problem to be addressed was the internal scattering of expertise concerning finance, ICT, human resources and quality assurance. In addition, the processes and foundations for managing the institute were harmonised and made more efficient. Therefore, four support services were set up, centralising expertise in the areas mentioned before. Also a legal affairs unit, and a service for scientific coordination and communication were established. The latter was given the task to fill in several gaps identified during the Jenner analysis, more specifically regarding communications, research project financing and project management.

In addition to organisational reform, the WIV-ISP was able to tap into new financial resources, by providing the communities, regions, federal agencies with contract-based services, and by bringing in research projects funded by the European institutions (framework programmes, ECDC, EFSA, EUROSTAT), the Belgian Science Policy Office (BELSPO), and the FPS Public Health. Some large programmes and important collaborations were set up in this way, such as, for instance, the health surveys that are requested every 5 years by the joint Belgian competent authorities involved in health policy. Another interesting example is the coordination of a network of 40 microbial reference centers (of which 13 are located in our institute). We do that on behalf of the National Institute for Illness and Incapacity Insurance. The latter partner also assigned the construction of the ‘Healthdata.be’ platform to the WIV-ISP. This platform aims at collecting standardised health data from the entire country. Finally, to conclude the examples taken from the long list of collaborations, we would like to mention the management of the largest Belgian collection of medical molds and yeasts, on behalf of BELSPO.

A decade after kicking off the Jenner project, these new resources allowed for a 47% increase of staff paid by the institute’s legal entity. In 2014 the legal entity employs 147 scientists, out of a total staff of 279. The contrast to the shrinking state-employed staff in the institute is stark. Their numbers went down by 25% over the same period of time (235 people in 2014). Contrastingly, numbers of PhD candidates have risen sharply. In 2014, about 40 researchers are seeking to obtain a PhD degree, in collaboration with almost all Belgian universities.
A healthy life for all

During the Jenner reforms, the institute was not only given a new structure, but also a modified mission. Thus, the WIV-ISP in the year 2014 aims to contribute through its activities to a ‘healthy life for all’. In concrete terms, the institute focuses on 5 principal themes to this end.

Monitoring the health of the population

Partly through the efforts of the Central Laboratory, life expectancy in the first half of the last century rose spectacularly, largely through the suppression of infectious diseases. Nowadays that problem is less acute and the institute’s focus has turned towards increasing our lifespan without major health problems. To achieve this goal, the WIV-ISP monitors and analyses the current health of the people and the way in which that is evolving over time. After all, an effective reaction requires knowledge of the health condition and the needs of the people. That information is gathered through field surveys on a national scale, from which facts and trends are distilled about such things as health condition, the use of medicines, eating habits and the general wellbeing of the population.

Infectious diseases are not such a big problem as they were a century ago, but we still need to keep an eye on them. In this respect the WIV-ISP’s focus is on diseases that are still strongly present in Belgium and in the rest of the world (AIDS, flu, tuberculosis, Salmonella, and so on). For this purpose, the institute coordinates an extensive network of laboratories, centres and platforms that monitor such diseases and offer clear and reliable information on the diseases in circulation, their causes, their prevention in the population and in addition on pathogens that suddenly (re-)appear. This also enables us to provide the policy level with the necessary scientific support needed in crisis situations.

FLU SURVEILLANCE AND THE PANDEMIC OF 2009

One of the most well-known surveillance figures of the WIV-ISP is that of the number of people with flu. Those figures have been supplied for many decades already via a network of monitoring GPs and laboratories.

In addition to the surveillance activities, the institute accommodates the national reference centre for influenza. That typifies the flu viruses circulating in our country and provides feedback on the subject to, among others, the Belgian authorities and the World Health Organisation. That information is important for reaching (policy) conclusions in good time.

OUR MISSION

The Scientific Institute of Public Health is the scientific reference for public health in Belgium. We support health policy by means of innovative research, analysis and surveillance. With our expert advice we will be contributing to a ‘healthy life for all’.
Food safety

Food safety is an absolute priority in health policy. After all, eating properly is essential for our health. Healthy eating ensures zest for life, wellbeing and protects us from many diseases, such as heart and arterial diseases, diabetes, and certain forms of cancer.

Foodstuffs are continually monitored in order to guarantee their quality. For that supervision, the organisations that monitor the safety of the food chain (i.e., the FPS Public Health, Safety of the Food Chain and Environment and the Federal Agency for the Safety of the Food Chain) call upon the expertise of the WIV-ISP. The institute is the reference body for four major domains in the field of food safety:

- **Microbiology**: the Federal Agency for the Safety of the Food Chain has allocated a large number of its national reference laboratories to the WIV-ISP. Those labs examine food samples that the Agency supplies for the nature and quantity of the germs present. In addition, the institute supports the Agency and the authorities in cases of human food poisoning, by identifying the source of the contamination.

- **Genetically Modified Organisms (GMO)**: the WIV-ISP assesses requests for the use of GMO products and for GMO crops in Belgium, in support of the FPS Public Health, Safety of the Food Chain and Environment. In addition, the FASFC has designated the institute as the national reference laboratory for detecting GMOs in our food.

- **Contaminants and residues in food**: the institute is active in assessing health risks relating to toxic substances, residues and contaminants in food. That enable the authorities concerned to intervene in good time.

- **Materials in contact with food**: containers of cooked products, the materials used to fabricate kitchen equipment, plates and cutlery often consist of metal compounds, alloys or plastics of which particles can migrate into the food and thus pose a threat to people’s health. Therefore, the food safety agency subjects them to regular checks. As a reference laboratory, the WIV-ISP offers technical and scientific assistance in this regard, by carrying out migration analyses, for example.

In times of major disquiet regarding public health, the WIV-ISP plays a leading role – as was the case during the Mexican flu epidemic in 2009. The situation in our country was monitored in minute detail, samples from potential patients were analysed and our scientific expertise was made available to the authorities. After about 4000 analyses, a series of recommendations and a vaccine, the panic was over and life returned to normal.

Influenza curves since 2008 (2014, ©WIV-ISP)
Influence of the environment on health

Already in the 1970s, it was known that exposure to polluting substances in water or air could be a threat to health. Since then, there have been increasing indications that many of the present-day fatalities and diseases are influenced to a greater or lesser extent by environment-related issues. Therefore, it is extremely important to study the risks in order to minimise their effects. The authorities regularly call upon the expertise of the WIV-ISP when there is a suspicion of localised environmental pollution. That is done, for example, by monitoring toxicological or health risks, or by carrying out bio-monitoring studies in order to be able to estimate the evolution of a particular situation. That was the case for instance in 2013, when there was a train accident in Wetteren involving a spillage of acrylonitrile.

FOOD SAFETY, A COMMON THREAD THROUGHOUT THE HISTORY OF THE INSTITUTE

From the early years of the institute, food safety has always been an important issue guiding our activities.

One of the high points in this regard was the dioxin crisis of 1999. At the height of that crisis, the WIV-ISP carried out a large number of PCB analyses. It also played an important role in clarifying the relationship between dioxin and PCBs and assessing the effects on public health.
Bio-safety risks are also studied in addition to chemical risks. The institute after all assesses not just the potential risks of food-related GMOs to the health of people and the environment, but also those of using genetically modified organisms (GMOs) or pathogens.

Another, and also one of the longest-known environmental problems we research is that of air pollution. The WIV-ISP investigates the consequences of this issue for health, as well as looking at more recent questions, such as the impact of electromagnetic radiation (mobile phones, for example) and indoor air pollution in buildings that are usually older and poorly ventilated.

The institute also monitors allergenic mould spores and pollen in the air via the Airallergy network.

Good quality medicines, vaccines and medical instruments

The prevention and treatment of diseases requires appropriate, approved resources. These include medicines, vaccines and medical instruments to be used by the patient. It is the responsibility of the appropriate authorities, in particular the Federal Agency for Medicines and Health Products, to assess them so that their quality, safety and effectiveness can be guaranteed. Already since the 1950s, the institute has played an important role in this regard. It continues to do so today, through the designation of the Medicines service as the national reference laboratory for the quality control of registered medicines and magistral preparations. In this regard, extra attention is being paid to the study of the growing problem of illegal and fake medicines and health products.

NOT ALL BLUE PILLS ARE HARMLESS

In 2011 the WIV-ISP developed a new method for detecting fake medicines, as can be seen from this press cutting of 15 July 2011.

“The influx of fake medicines for erectile dysfunction has seemed unstoppable over the last few years – but hope is in sight. Researchers at the Scientific Institute of Public Health have developed, together with colleagues from the universities of Ghent and Liège, an effective way of detecting fake tablets.

Fake medicines can be highly risky to your health. “For instance, they can contain a dose of active substance that is too high or too low, and often contain poisonous active ingredients, solvents and impurities,” explains Dr. Jacques De Beer, head of the Medicines dept. at the WIV-ISP. On the Belgian market the greatest amount of fraud is in medicines against erectile dysfunction.

The new way of telling fakes from original products is based on three methods that complement one another. The first detects the impurities in the fakes. The two other methods make the distinction on the basis of the different way in which genuine and fake medicines diffract light (infra-red and Raman spectroscopy). “With this method we can even tell whether fake medicines come from the same illegal production lab,” explains Dr. Eric Deconinck (WIV-ISP). Information of this kind can be extremely important for the inspection services. In the long term, the research should also result in the production of portable devices so that customs officials and inspectors can intercept fake medicines on site.”
As far as the assessment of vaccines is concerned, the WIV-ISP is active in several fields. In the first place, the institute assesses and checks the quality of vaccines and derived blood products before they are put on the market. That is done in close collaboration with the World Health Organisation (WHO) and the European authorities. In addition, our scientists study the impact that vaccination has on the diseases that are on the vaccination calendar (such as measles, mumps or whooping cough), and of certain specific vaccination schemes (e.g., against Human Papilloma Virus, which causes cervical cancer). They also take part in the development of a better vaccine against tuberculosis.

In addition to medicines and vaccines, the medical laboratories are subject to continual and meticulous monitoring. The WIV-ISP recognises these laboratories on behalf of the FPS Public Health, after they have proven that they comply with very strict quality criteria.

The functioning of the Belgian health system

The proper functioning of the healthcare system must be regularly assessed in order to guarantee its efficiency. The WIV-ISP carries out regular check-ups in collaboration with the Federal Health Care Knowledge Centre (KCE) and the National Institute for Illness and Incapacity Insurance (RIZIV).

The assessment is made on the basis of indicators, which relate to such things as the health of the population and the accessibility and quality of healthcare provision. The information collected for Belgium with the aid of these indicators is forwarded to the WHO, the European Commission and the OECD to be used at international level. The national health survey, which the institute organises every four or five years, provides a treasury of information for that purpose. After all, it makes it possible to estimate the appearance and distribution of health indicators, and to analyse social inequalities in the accessibility to health care.

Furthermore, the WIV-ISP takes part in a whole series of initiatives for assessing the quality of care provision to patients. Thus, the institute coordinates national patient registers on various subjects, including mucoviscidosis, neuro-muscular conditions or drug addiction. For patients with diabetes, the institute, in collaboration with the RIZIV, assesses care projects started by doctors for people suffering from type-2 diabetes or kidney insufficiency. The WIV-ISP also accommodates the Belgian Cancer Centre, which continuously assesses the cancer policy in Belgium and formulates new measures for the Cancer Plan. Finally, our researchers also work on rare diseases and medicines. In this regard, the institute is among other things working on a website where citizens, specialists and doctors will be able to access all the information on more than 6,000 rare diseases.

LEGAL HIGHS

Since the middle of the 1990s, the WIV-ISP has been running a research programme on ‘the use of drugs and drug-related disorders’. As part of this, a Belgian Early Warning System for new (designer) drugs was set up in 1997. Such drugs, also known as ‘legal highs’ because of their dangerous but not illegal character, are a problem that is growing throughout the European Union. The WIV-ISP is taking responsibility for the national coordination of this network and in this way warned in 2012 that there were no fewer than 71 new substances of this kind in Belgium, a sharp rise compared with the 43 substances in 2011.
Epilogue: An eye to the future

It is obvious that the institute has managed throughout its history to adapt to new needs and new circumstances. That could be seen in various fields.

Thus, the institute has evolved several times in the previous decades in reaction to political decisions and institutional reforms, managing on each occasion to keep the focus on science in the service of public health.

An evolution can also be seen in terms of content, in line with the changing social context. Thus, since many people were still dying of infectious diseases during its early years, the institute’s priority was to suppress infectious diseases and improve hygiene. Thereafter, the attention of society and the institute widened to include the influence of environmental pollution on health. With the rise in life expectancy, the aging population and the increase in chronic illnesses over the coming years will be demanding ever more attention. In addition, the institute will have to move further in the direction of a “one health” approach and a global health strategy, whereby an integrating and multidisciplinary view on health and health problems will be essential.

As in the past, new scientific themes will be embraced; others will be modified or terminated. Public Health genomics over the last ten years has already resulted in great progress in the study of human health. However, we are on the brink of a new era. New ‘omics’ and bio-informatics concepts, technological revolutions in the fields of such things as mass spectrometry and genome sequencing, and the interpretation of genetic information together with clinical observations are heralding enormous opportunities for public health. This is why major investments in experts and infrastructure have been planned, starting in 2015, in order to set up a bioinformatics platform.

We will also have to search for answers to complex questions regarding socio-economic inequalities in health and health expectation, and on the relationship between our lifestyle and health. The rise in respiratory and cardiovascular diseases caused by air pollution and the increase in allergies and asthma are gradually becoming a serious problem. The study on the exposure of the population to certain environmental contaminants and on the effects of the environment on health is therefore a priority – and certainly in a highly contaminated country such as Belgium.

Finally, attention will also need to be paid to infectious diseases that (re)appear suddenly and to the transfer between animals and humans. There is, for instance, the growing problem of antibiotic-resistant bacteria and the appearance of new variants of old diseases against which vaccines do not always offer sufficient protection. Then again, global warming is resulting in the advance of certain infectious diseases and carriers. Considering these challenges, the decision of the board of Belgian federal ministers on 04 April 2014 to co-house the medical and veterinary expertise of the WIV-ISP and the VAR on a single campus, will offer new opportunities.

The challenges in the future are numerous and serious, but the WIV-ISP and its staff are ready to take them on!
Biographies of the Directors

Directors of the Pasteur Institute of Brabant and Brussels (1900-2003)

Jules Bordet

Director of the Pasteur Institute of Brabant from 1900 to 1940

Born on 13 June 1870 at Soignies and died in Ixelles on 6 April 1961.
Doctor of medicine, surgery and obstetrics at the Université Libre de Bruxelles in 1892.

The scientific achievements of Jules Bordet have already been described in detail in the first chapter. The following text is limited to a few additions.

From 1907 to 1935 Jules Bordet was professor of Bacteriology at the Université Libre de Bruxelles. He was a member of various European Academies, the Institut de France, and the National Academy of Science in the USA. In 1933 he was appointed chairman of the Scientific Board of the Pasteur Institute in Paris.

He was much loved and received many honours, including the Grand Cross of the Légion d’Honneur. Many universities throughout the world gave him an honorary doctorate. The Belgian Royal Family too was familiar with his work. He was deeply touched by Queen Elisabeth’s personal appreciation.

Paul Bordet

Director of the Pasteur Institute of Brabant from 1940 to 1971

Born in Brussels on 26 April 1906 and died in Waterloo on 23 August 1987.
Doctor of medicine, surgery and obstetrics at the Université Libre de Bruxelles in 1930.

After completing his studies, Paul Bordet soon followed in his father’s footsteps. He won a travelling scholarship from the government and the next year he frequented the various laboratories of the Pasteur Institute in Paris. After that he joined the Brussels Pasteur team. From 1936 he also lectured at the Université Libre de Bruxelles, where he took over the Chair of Bacteriology after his father retired. In the Pasteur Institute he followed his father in 1940 as director.

Paul Bordet was Doctor honoris causa at the University of Lausanne and (honorary) member of various European scientific associations.

Jacques Beumer

Director of the Pasteur Institute of Brabant from 1971 to 1978

Doctor of medicine, surgery and obstetrics at the Université Libre de Bruxelles in 1937.

In 1938-1939 Jacques Beumer worked successively in the Statens Serum Institut in Copenhagen, the Pasteur Institute in Paris and the Lister Institute in London. On 1 June 1939 Jules Bordet took him on as assistant in the Pasteur Institute of Brabant. There he became head of the laboratory in 1947, and Deputy Director in 1948.

In Beumer’s early years, bacteriophages (viruses that can infect and kill bacteria) were a hot topic. In that period, he worked on the reproduction of those phages and the formation of the receptor to which the phage attaches itself when infecting the bacterium. His work formed the basis for later typing bacteria (more specifically
Salmonella, Pseudomonas aeruginosa and Staphylococcus aureus) by means of phages. In 1951, his laboratory became the national reference centre for lysotyping.

In 1971, he became head of the entire institute. During his directorship the new building in Verrewinkel was erected, but would not be occupied until after his retirement. Beumer was also very active in the academic world. In 1948 he came to the ‘Bacteriological sciences’ dept. at the Université Libre de Bruxelles. In 1957, he became a lecturer there, in 1962 associate professor and in 1968 full professor. During his career he gave a great many lectures at the Physiology faculty, the Ecole de Santé Publique and the Institut supérieur d’éducation physique.

Frans De Meuter

**Director of the Pasteur Institute of Brabant from 1978 to 1998**

Born in Etterbeek on 4 August 1932 and died on 29 October 2007.

*Doctor of medicine, surgery and obstetrics at the Université Libre de Bruxelles in 1958, graduate in tropical medicine in Antwerp and specialist physician in Clinical Biology in 1965.*

Frans De Meuter started working at the Pasteur Institute of Brabant in 1960. He set to work on the microbiological and epidemiological aspects of toxoplasmosis. In that regard, he set up a section for diagnosing this condition. In 1967, he became head of the laboratory, in 1974 departmental head and in 1976 Deputy Director.

From 1974, he was also associated with the Microbiological Sciences course at the Université Libre de Bruxelles. Two years later he was appointed associate professor at the faculty of Medicine and Pharmacy.

Jean Content

**Director of the Pasteur Institute of Brussels from 1998 to 2003**

Born in Antwerp on 18 March 1942.

*Doctor of Medicine, surgery and obstetrics in 1965 at the Université Libre de Bruxelles, and Licentiate in molecular biology.*

Jean Content specialised in animal virology at the Pasteur Institute in Brabant, and was awarded a degree in molecular biology at the ULB. He supplemented that with a post-doctoral sojourn at Berkeley University in California. After defending his dissertation about the molecular biology of the influenza virus, he became aggregated for teaching in higher education.

He devoted himself to the study of the influenza virus and the molecular biology of mycobacteria, among other things, but his most important contribution to science was undoubtedly his research into interferon and interleukins. In the 1980s, he cloned – together with Erik De Clerq and Walter Fiers – the genes that code for interferon-ß and interleukin-6. He published more than 170 scientific papers.

In 1979, he became Deputy Director of the Pasteur Institute and in 1998, Director. He is a member of the Royal Academy of Medicine of Belgium since 1986 and Vice-President of the governing council of the International Network for Cancer Treatment and Research. Between 1998 and 2007, he lectured on molecular genetics at the Université Libre de Bruxelles.
Maurice Henseval

**Director of the Central Laboratory for Hygiene from 1905 to 1920**

*Born in Liessies (France) on 25 November 1873 and died in Ghent on 24 April 1926*

*Doctor of natural sciences (zoology) at the University of Leuven in 1895 and Doctor of medicine, surgery and obstetrics in 1897.*

Maurice Henseval was an assistant for four years at the zoological institute of the University of Leuven and worked in various laboratories and institutes abroad. At the *École de Médecine militaire du Val-de-Grace* (Prof. Vincent), he studied anaerobic water bacteria (1906) and anti-typhus inoculation (1914). At the Pasteur Institute in Lille (Dr. Calmette) he worked on plague bacilli (1909), at the Institut supérieur de vaccine de l’*Académie de Médicine de Paris* (Prof. Kelsch and Dr. Camus) on vaccines (1909). At the Pasteur Institute in Paris (Dr. Martin), he worked on the control of serums (1912); at the Medical School of St. Bartholomew’s Hospital in London, he investigated water from oyster ponds (Dr. Klein) (1910). He also represented the Belgian government at the international conferences on hygiene in Paris (1905), Berlin (1906), The Hague (1907) and Budapest (1909).

In 1905 he became director and chief inspector of the Central Laboratory for Hygiene and inspector of the anti-tuberculosis dispensaries in Brabant. In addition, he was director of the Laboratory for the Study of Marine Products in Ostend and the provincial service for bacteriological analyses of East Flanders.

From 14 November 1919 he lectured on, among other things, ‘public and private hygiene’ and ‘bacteriology’ at the University of Ghent. There he also headed the Laboratory for Hygiene and Bacteriology at the Faculty of Medicine.

Louis Van Boeckel

**Director of the Central Laboratory for Hygiene from 1920 to 1928**

*Born in 1886 in Antwerp and died on 25 December 1928.*

*Doctor of medicine, surgery and obstetrics at the University of Leuven in 1909.*

In 1911 Louis Van Boeckel became the first health inspector of West Flanders. In that capacity, he established the provincial laboratory on Sint-Janstraat in Bruges. World War I brought him to the trenches and the field hospitals at the Front. In 1920 he became director of the Central Laboratory.

By the end of 1923, Van Boeckel applied for the post of Dutch-speaking lecturer of the education programme for medical doctors at the Faculty of Medicine of Ghent University. As did his deputy, Albert Bessemans. The latter did get the job.

In the scientific field he is most well known for the standard work on encephalitis lethargica, which he wrote together with Albert Bessemans and Paul Nélis. In addition to being a scientist and civil servant, Van Boeckel was a publicist and lecturer, among other things.
Jan-Frans-Fritz Van Den Branden

Director of the Central Laboratory for Hygiene from 1929 to 1942

Born in Mechelen on 15 February 1885 and died in St. Lambrechts-Woluwe on 6 February 1942. Doctor of medicine, surgery and obstetrics at the University of Leuven in 1909.

After his medical studies, Frans Van den Branden stayed on for another year as assistant to Professor Denys at his laboratory in Louvain.

In 1910 he set off for Africa to take part in the scientific expedition to Katanga on assignment from the Ministry of the Colonies (J. Renkin). Sleeping sickness was a major problem in that region, certainly for the two big companies that were active in the region – the Société Union Minière du Haut-Katanga and the Compagnie des Chemins de fer des Grands Lacs.

During his leave in Europe, he studied at the School of Tropical Medicine. After his return to the Congo, he went to work at the Leopoldstad Laboratory. In 1915 he was appointed director there, and remained as such until the end of his colonial career in 1929.

In 1925 he also became inspector of the provincial laboratories.

Africa had not only made Van den Branden an unrivalled hygienist, but he also built up a solid reputation as a scientist and administrator. That was the foundation for his appointment as director of the Central Laboratory for Hygiene upon his final return to Belgium. At the same time, he was appointed professor at the Institute of Tropical Medicine.

Van den Branden’s scientific activities were prodigious. Together with Louise Pearce he conducted the first tests with tryparsamide, a medication for sleeping sickness. He also tested another product, Suramin (‘Bayer 205’), which he discovered could prevent an infection with Trypanosomes (the pathogens that cause sleeping sickness). This method became known as Bayerisation. In total he published more than 200 papers and communications, mostly on tropical medicine.

Paul Nélis

Director of the Central Laboratory for Hygiene from 1942 to 1946 and Chief Inspector-director of the Inspectorate of Laboratories from 1946 to 1952

Born on 17 August 1901 in Binche and died in Profondsart on 27 August 1952. Doctor of medicine, surgery and obstetrics at the State University of Ghent in 1925 and Physician-hygienist in 1926.

After completing his studies he left for Paris. At first he worked as foreign assistant at the Chaire d’Hygiène of the faculty of medicine in Paris. After that, he moved to the Pasteur Institute in Paris. In 1928 he became health inspector and went to work at the Central Laboratory. In May 1942 he was appointed acting director and in July 1944 permanent director of the laboratory. In 1946 he became the first director of the Laboratory Inspectorate. From 1948 onwards, he prepared the foundation of the IHE, together with Alphonse Lafontaine.

During his career he mainly conducted research into the immunological aspects of microbiology and infectious pathology. He made his most important contributions with his studies on Staphylococcus toxin and antitoxin, and on vaccines against smallpox and diphtheria. The first won him the ‘Prix Roussilhe’ of the Académie de médecine de Paris in 1937 and the second the Henri Jaspar prize of the National Work for Child Welfare in 1934.
Alphonse Lafontaine

**Director of the Institute for Hygiene and Epidemiology from 1953 to 1983**

Born on 24 August 1918 in Orival (France) and died in St-Lambrechts-Woluwe on 14 December 2003. Doctor of medicine, surgery and obstetrics and Licentiate in physical education at the University of Louvain in 1942. Physician-hygienist in 1943.

During and shortly after his studies Alphonse Lafontaine was assistant at the laboratory for Pharmacodynamics (1939-1943) and in the Neurology dept. of Louvain University (1942-44). There he conducted research into burns and nerve disorders respectively. After the war he became ‘Chef de Clinique’ of the hospital Hôtel-Dieu in Paris. There he also conducted research into the metabolism of magnesium, into metabolic problems linked to tuberculosis, into the biological dosage of metals and sulphurous amino acids, and into the therapeutic use of the latter.

In 1948 he returned to Belgium at the request of the then head of the cabinet of the Minister of Health, Dr. Spaey, in time taking over as head of the public health laboratories. Thus he came to work at the Central Laboratory for Hygiene as Inspector of Hygiene. There he conducted research, together with Paul Nélis, into tuberculosis and smallpox vaccines. At the same time he worked with Nélis on establishing the Institute for Hygiene and Epidemiology and he traced out the integration of the various public health laboratories into this new institute. In 1953 he was appointed director. During his 30 years as director he was active in various domains, including hygiene, microbiology and radio-protection. He was not only active in research, but was also one of the authors of the European Directive that laid down the basic standards for protecting people from ionising radiation. At the same time, he widened his focus to include environmental problems and eco-toxicology, and especially heavy metals and air pollution. From 1961 to 1985 he was also associated with the Catholic University of Louvain. He lectured there on such subjects as hygiene, sanitary legislation, radio-protection and protection of the environment. During his long career he was also involved in numerous national and international committees and councils. He said that the huge diversity of subjects that he had to fit into his scientific, university and administrative responsibilities taught him to see the problems in a more global, international context and to orient his research in that direction.

Godfried Thiers

**Director of the Institute for Hygiene and Epidemiology from 1983 to 1996, the Scientific Institute of Public Health-Louis Pasteur from 1996 to 2003 and the Scientific Institute of Public Health from 2003 to 2005.**

Born in Roeselare on 5 October 1941.

Doctor of medicine, physiology and obstetrics at the Catholic University of Leuven in 1967 and Diploma Tropical Medicine at the Institute for Tropical Medicine in Antwerp. Physician-Hygienist and Special diploma in Public Health at the Catholic University of Louvain in 1970.

Between 1971 and 1975 Godfried Thiers worked as physician-hygienist in Tunisia (Cap Bon) under a Belgian-Tunisian public health project. There he took the Laboratoire Régional de Santé Publique and four “Laboratoires auxiliaires” under his wing. In addition he was Physician-Hygienist for the Soliman district, where he applied himself to polyvalent activities, such as clinics for infants, family planning, vaccinations, fighting tuberculosis and eradicating malaria.
After his work in Africa, Thiers came to work at the IHE as research assistant in 1976. Some years later, he forged a modern epidemiology department there, which grew to become the biggest department in the institute. He became Director of the institute in 1983.

During his career he also lectured on microbiology, hygiene, laboratory techniques and haematology at the Institute of Tropical Medicine and the University of Antwerp, as well as at the Pius X nursing school in Brussels and the *Ecole professionnelle de Santé Publique* in Nabeul (Tunisia).

Like his predecessor, Godfried Thiers was a member of many national and international scientific committees and councils, including the WHO and the European Commission. Between 1999 and 2002 he represented Belgium in the WHO Executive Board.

**Directors of the Scientific Institute of Public Health (2003-today)**

**Godfried Thiers**

*Director from 2003 to 2005*

**Johan Peeters**

*Director of the Scientific Institute of Public Health since 2006*

*Born in Mechelen on 3 July 1951.*

*Doctor in Veterinary Medicine at the University of Ghent in 1975, diploma in medical and veterinary mycology at the Institute of Tropical Medicine in 1979 and Master's degree in Zootechnology at Gent University in 1981. Diploma in Human Resources Management at the Catholic University of Leuven in 1995 and Diploma in Advanced management at the Vlerick School in 2005.*

Johan Peeters began his scientific career in 1975 as research assistant at the laboratory for bacteriology and infectious diseases at the faculty of veterinary sciences in Ghent. In 1977, he changed over to the department for small livestock pathologies at the then National Institute for Veterinary Research (NIVR), where he specialised himself in the etiology, diagnosis, treatment and prevention of contagious digestive tract diseases in commercially kept rabbits. In 1990 he became head of the department for Parasitology and he oriented his research towards the prevention of coccidiosis in poultry and *Cryptosporidium parvum* in calves. Three years later he was head of the Department for General Parasitology and Small Livestock Pathologies. Another year later he became Director of the NIVR and headed the merger (1997) with the Institute for Chemical Research. In that year he became President-Director of the new Veterinary and Agrochemical Research Centre (VAR).

From 2005 he led a business process re-engineering project (baptised ‘Jenner project’), the task of which was to establish the broad outlines for the future of the WIV-ISP and the VAR. In 2006, he transferred to the WIV-ISP as General Director. Next to an in-depth restructuring of the institute, he supported new initiatives, such as setting up the HealthData.be unit, a bioinformatics platform, and a ‘Health and Environment’ service. In a joint
effort with the VAR, he managed to get the approval of the Board of Ministers to bring together the expertise of both
institutes and regroup them on the Erasmus-South Campus in Anderlecht.

He published about 100 scientific papers on –among others– colibacillosis, iota-enterotoxemia, Tyzzer’s disease, mycoplasmosis, coccidiosis and cryptosporidiosis, and he was involved in managing several COST projects. He was a founding member of the International Association of National Public Health Institutes, and the European Science Advisory Network for Health. He was also President of the World Rabbit Science Association and the Association of Scientific Staff at the Universities. Between 1986 and 1991, he lectured rabbit pathologies at the Faculty of Veterinary Medicine of Ghent University, and between 1988 and 1997 at the Institute for Tropical Medicine.
Chapter I

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Chapter II

- Pasteur, Bordet...et nous. Commémoration du 100e anniversaire de la mort de Louis Pasteur. 1995. Institut Pasteur de Bruxelles, Bruxelles, pp.35
Chapter III

- Inventory of the Archive of the Public Health Administration. General State Archive, 2014. Inventory I 566
- Speech given by Dr. P. van de Calseyde, Director of the European Regional Office of the World Health Organisation, at the inauguration of the Institute for Hygiene and Epidemiology on 16 December 1957 in Brussels.

Chapter IV

- L’Institut d’Hygiène et d’Épidémiologie au travail pour la sauvegarde de la santé publique. Info folder from the world exhibition of 1958, where the IHE gave lab demonstrations in hall 11.
- ‘Institut d’Hygiène et d’Épidémiologie’. It is thought that this text was written around 1968, and is probably from the hand of the then Director of the IHE, Dr. Lafontaine.
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Chapter V

- WIV-ISP: 110 jaar wetenschap in dienst van de volksgezondheid. Speech given by Johan Peeters, Director of WIV-ISP, during the academic session on the occasion of the 110th anniversary of the WIV-ISP on 30 January 2014.

Biographic material on the directors

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