

# Newsletter 31

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## Welcome note

Welcome to the 31<sup>st</sup> issue of our Newsletter where we present our associates in Jamaica and our Packing Department Supervisor.

Under Environmental Issues we report on the smog phenomenon and in the ABC of Pharmacy we continue with Medicinal Dosage Forms.

In the section on Corporate Social responsibility we have a student award, the Christmas fund-raiser organised by the Cyprus Association of Cancer Patients and Friends (PASYKAF) and the Open Access Week. In Remedica News we pay tribute to our former colleague Dr. Ioannis Kannavas, we refer to our participation in medical conferences and to another collaboration with the Cyprus University of Technology.

Finally, there is a feature article on Cyprus Decorated Bread and a glimpse at the Cedar Valley and the Mouflon (agrinio).

Finally, may I wish you glad tidings for the Festive Season and a happy and healthy New Year. ■

Charalambos Pattihis  
Group CEO

## Remedica Worldwide: T. Geddes Grant Limited - Jamaica



**Jamaica is an island country situated in the Caribbean Sea, comprising the third-largest island of the Greater Antilles. It lies**

**about 145 kilometres south of Cuba, and 191 kilometres west of Hispaniola, an island containing the nation-states of Haiti and the Dominican Republic. Jamaica, with an area of 10,990 km², is the fifth-largest island country in the Caribbean. With a population of 2.8 million people, Jamaica is the third most populous Anglophone country in the Americas (after the United States and Canada), and the fourth most populous country in the Caribbean. The capital, Kingston, is it's largest city, with a population of 937,700.**

Jamaicans are of predominately African descent, with significant European, Chinese, Indian, and mixed-race minorities. Jamaica has a mixed economy with both state enterprises and private sector businesses being present. The main sectors of the Jamaican economy include agriculture, mining, manufacturing, tourism, and financial and insurance services. Tourism and mining make the largest contribution in terms of income from foreign countries.

Remedica's local representative in Jamaica is T. Geddes Grant Limited, which is a leading distributor of pharmaceutical, personal care, food and agricultural products: it also supplies office equipment. T. Geddes Grant Limited was founded in 1901 and acquired by the Musson Group in 1996. The company employees over 300 staff with each

division having dedicated sales representatives equipped with hand held sales tablets and supported by a highly efficient customer service department.

The pharmaceutical and consumer division distributes branded and generic medicines along with a wide range of over-the-counter pharmaceutical and personal care products to over 350 pharmacies, dispensing doctors, hospitals & medical centres across the island. Currently, the company has a team of 15 sales representatives, 2 brand managers, 2 regional sales managers and a sales & marketing manager who between them provide an island-wide customer service. The company currently owns a warehouse facility covering 24,000m² with plans on the way for expansion in 2016. ■



# The ABC of Pharmacy:

## Medicinal Dosage Forms-Part One

The active ingredients (drugs) that are used to treat disease in humans and animals were originally obtained from natural sources such as plants and minerals but nowadays most of them are organic chemicals which have been synthesised in a laboratory. Whatever the source of the drug it cannot be used in the form in which it is produced (usually a powder but sometimes a liquid) but needs to be converted into a dosage form which is not only acceptable to the patient but is also capable of delivering the required dose to the site of action in the body. This process is known as formulation and is a skill which is unique to the pharmaceutical scientist who has been properly trained. In all but the most simple of formulations this activity involves the use of excipients which should be inert and safe with their sole function to act as a carrier or platform for the drug. Also they should not alter the pharmacological activity of the drug but are expected to protect it and facilitate its passage through the body.

Originally, the types of dosage form which were used to deliver drugs which were natural products were restricted by the fact that they were compounded by hand so that the processes involved were grinding and extraction by heating with solvents such as water or alcohol. Most preparations were therefore powders, pills or solutions that were swallowed through the mouth. As the science of dosage form design and manufacture advanced more sophisticated ones were developed as did the technology available for their manufacture. Probably the biggest steps forward was the introduction of the compressed tablet and the hard gelatin capsule in the mid 19<sup>th</sup> century: in both instances these were developed to such an extent that by the middle of the 20<sup>th</sup> century they were the dominant dosage forms and by the end of that century more than 80% of prescribed medicines were dispensed as either a tablet or capsule.



However, the ability to formulate a drug in a dosage form which provided the opportunity to deliver it to a specific site (e.g. the eye or the skin) or to alter the speed with which it exerted its effect (e.g. intravenous injection) was also the subject of innovation and development. Consequently, nowadays a range of formulations of the same drug are offered to the physician so that he can prescribe the one most suitable to the patient's needs and their ability to adhere to the administration procedure. All of these preparations have been included in the Pharmacopoeias which are now published around the world and the following list which is taken from the British Pharmacopoeia is typical: -

Capsules, medicated chewing gums, liquids and powders for cutaneous application, ear preparations, eye preparations, medicated foams, granules, preparations for inhalation, preparations for irrigation, nasal preparations, oral liquids, oral powders, parenteral preparations, pressurised pharmaceutical preparations, rectal preparations, sticks, tablets, medicated tampons, topical semi-solid preparations, transdermal patches, vaginal preparations.

Examples of these formulations that are administered by different routes can be further divided into systems with different characteristics that can be used to elicit various effects and rates of response.

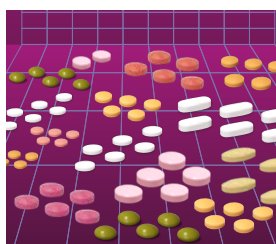
ROUTE OF ADMINISTRATION	DOSAGE FORM EXAMPLES
BUCCAL	Tablets, Lozenges, Gels, Ointments.
ORAL	Liquids, Suspensions, Emulsions, Gels, Linctuses, Powders, Granules, Capsules, Tablets.
TOPICAL	Ointments, Creams, Pastes, Lotions, Gels, Solutions, Sprays, Patches.
PULMONARY	Aerosols, Solutions, Suspensions, Dry Powders.
NASAL	Solutions, Suspensions, Sprays, Creams, Ointments.
OCULAR	Solutions, Suspensions, Creams, Ointments, Inserts.
AURAL	Solutions, Suspensions, Ointments.
RECTAL	Suppositories, Solutions (Enemas), Creams, Ointments.
VAGINAL	Pessaries, Foams, Creams, Tablets
UTERUS	Intra-uterine Devices.
PARENTERAL	1. Injections – Intradermal, Subcutaneous, Intramuscular, Intravenous, Intra-spinal, Intra-articular. 2. Implants, Depot injections.

An indication of the speed in which a drug can exert an effect as a function of the type of formulation in which it is included can be seen from the table below.

TIME OF ONSET OF ACTION	DOSAGE FORM
Seconds	Intravenous injections
Minutes	Intramuscular & subcutaneous injections, Buccal tablets, Aerosols, Gases
Minutes to hours	Liquids, Suspensions, Powders, Granules, Tablets.
Several hours	Oral controlled release forms, Coated tablets.
Days to months	Depot injections, Implants, Patches.



That well-known medicinal drug, nicotine, provides a good example of the way in which the dosage form is used to alter its speed of release and duration of action. It is formulated as a chewing gum, a sublingual tablet which is dissolved under the tongue, a lozenge, an oral spray, a nasal spray, an inhalator which is used in a similar manner to a cigarette and a topical patch. The availability of all these different devices offers the patient the opportunity to choose the one which offers them the most convenient and helpful way of quitting smoking according to their location and circumstances. Readers will of course be aware of the relative recent introduction of the e-cigarette which is another part of the armamentarium for smokers who wish to quit. However, these devices do not hold Marketing Authorisations (Product Licence) so their quality cannot necessarily be guaranteed. Of course, it would also be difficult for them to gain a licence if they were simply used to make life-style changes such as avoiding the ban on smoking in public places.



More detailed articles on some of the dosage forms listed above will appear in the subsequent editions of the Remedica Newsletter. ■

## Remedica News

### 1. Obituary: Dr. Ioannis Kannavas. (photo 1)

On behalf of Remedica's management and staff we would like to express our sincere sympathy and condolences to his family. Dr. Ioannis Kannavas worked for Remedica for 9 years, both as the company doctor, and at the same time being responsible for pharmacovigilance activities.

As a sign of respect and appreciation we give a brief background on the life and work of Dr. Kannavas:

He began his studies in the Medical School of the University of Athens from which he graduated in 1968 with a degree in medicine and became registered as a doctor. Until 1972 he worked as a general surgeon in the Municipal Hospital of Athens and from 1972 to 1979 as a specialist surgeon at Limassol General Hospital. In 1979 he formed his own private practice, which he ran until 2003. Dr. Kannavas was one of the first surgeons to use the laparoscopic surgical techniques after a period of training by Professor Frantzides in Wisconsin.

As an active member of both the Cyprus and the Limassol Medical Associations, he took part in many events and scientific conferences. His great love of sport led him to become actively involved in the Supreme Council of Athletes' Health of the Cyprus Sports Association and in the Cyprus Association of Sports Medicine. He took part in many overseas tours by the Cyprus national football team and was for many years medical officer at the Tsirion Stadium in Limassol. During the period 2001 – 2003 he was a member of the Drugs Council of the Cyprus Ministry of Health.



### 2. Medical conferences. (photo 2, 3)

Remedica's local sales team attended various conferences where participants (doctors and other health care professionals) had the opportunity to be briefed on both new and existing Remedica products. Indicatively we mention: the 29<sup>th</sup> World Congress of the International College for Maxillofacial Surgery (ICMFS), the 28<sup>th</sup> International Workshop on Helicobacter and Microbiota in Inflammation and Cancer, the 2<sup>nd</sup> Joint Cyprus-Greece Hypertension meeting, the 18<sup>th</sup> Cyprus Paediatric Congress and the 14<sup>th</sup> Cyprus congress of the Paphos Medical Association Asclepius.



### 3. Remedica - Cyprus University of Technology (CUT) collaboration. (photo 4)

With this collaboration, Remedica's R&D department seeks to develop a more targeted approach to medicine formulation. CUT's BIOLYSIS lab with its Hot-stage Microscopy (HSM) resources will provide fundamental information to facilitate this target. HSM is a powerful analytical method used to visually examine thermal transitions. By this means, it allows information to be gathered rapidly about the physical nature of materials with a very small amount of sample. Such information should be valuable to our R&D department in the development of new formulations. ■





www.huffingtonpost.co.uk



www.huffingtonpost.co.uk



www.reuters.com

# Environmental Issues: Smog

The term *Smog*, derived from the combination of the words *smoke* and *fog*, refers to a phenomenon where fog is contaminated with manmade air pollutants resulting in the formation of a dense, toxic and persistent cloud. This phenomenon was first observed in the 19<sup>th</sup> century about the time of the Industrial Revolution. The change in manufacturing practices was accompanied by workers abandoning the rural lifestyle and moving to create larger communities which eventually led to crowded cities. The factories in which these city dwellers worked burnt large quantities of coal as their source of power which added to the pollution produced by domestic use. It was therefore inevitable that these two uses of coal eventually led to major pollution incidents.

It should be noted that the burning of coal results in the emission of hazardous and toxic suspended particulate matter, carbon monoxide and sulphur and nitrogen oxides. Consequently repeated exposure to these pollutants can lead to impaired health mainly due to effects on respiratory, immune and cardiovascular system. The reason why the particulate matter in smoke is so harmful is that it is of a particle size which is optimal for penetration into the human airways.

Although numerous air pollution events have been reported, the most severe one is considered to be the Great Smog which occurred in London in 1952 during which, according to the Met Office (UK), more than 4,000 Londoners died due to primary or secondary effects. This figure is alarming when it is considered that it lasted for only five consecutive days.

With time scientists were able to provide an explanation for the occurrence of smog. As *Wright and Nebel* describe in their book *Environmental Science: Toward a Sustainable Future*, in normal conditions air temperature is higher near the ground because it is heated by radiation from the earth's surface which is in turn heated by sunlight. This heating effect diminishes with increasing altitude so that the temperature falls. Consequently, the warmer air next to the Earth's surface rises carrying any air pollutants with it, and drives them to higher altitudes.

According to the Met Office, at that time an anticyclone formed above greater London region, creating a layer of hot air above the city which led to the phenomenon of temperature inversion, where air close to the ground is cooler than the air higher above it. As a result air pollutants and water vapour could not escape to higher altitudes but remained at ground level.

In addition, as it was December, households needed to burn coal to provide heating. As a result, more and more plume accumulated near the ground resulting in a smog of an unprecedented magnitude.

Following the Great Smog of 1952, a number of regulations and directives were implemented in the UK including the Clean Air Act of 1956 which introduced a number of restrictions on fuel use by both industrial and household users. Following this, other European countries started to regulate air emissions in an attempt to avoid the occurrence of similar events and thus safeguard human and environmental health. According to the *European Environment Agency* emissions of most air pollutants have declined since the last decade of the 20<sup>th</sup> century confirming the beneficial effect of these regulations on a European scale. However, more is required to be done in order to eliminate the likelihood of smog phenomena to reoccur. ■



www.taxydromos.gr



en.wikipedia.org

# Corporate Social Responsibility: Remedica Cares

## 1. Student Award. (photo 1)

As part of Remedica's social contribution and its efforts to promote health and education in Cyprus, the company's Marketing Manager, Mr. Andreas Hadjipanayis, presented Mrs. Victoria Tattis, the graduate who obtained the highest mark in the Pharmacy programme of the University of Hertfordshire (University of Nicosia), with a monetary prize and a silver-plated olive tree.



## 2. Christmas fund-raiser by the Cyprus Association of Cancer Patients and Friends (PASYKAF). (photo 2)

Remedica sponsored the Christmas fund-raiser organised by the Cyprus Association of Cancer Patients and Friends (PASYKAF) held in Limassol. The proceeds will help the Association's efforts to continue to provide its free-of-charge services which include domiciliary nursing and relief care, social support, physiotherapy, a clinic for lymphoedema, day-care centres and patient transportation.



## 3. Open Access Week. (photo 3, 4)

As part of the International Open Access Week (19-23 October 2015) the Cyprus University of Technology (TEPAK) and Remedica renewed their agreement to finance the "Cyprus University of Technology Open Access Author Fund" for further two academic years with a total sum of €28,000. The "Cyprus University of Technology Open Access Author Fund" is an initiative of the Library of the Cyprus University of Technology and is a culmination of many actions directed towards the promotion of open access and the support of academics and researchers in the publication of their research in peer-reviewed electronic journals and open-access books with the publication expenses being borne by the author.



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# Remedica People

In this issue we are presenting our Packing Department Supervisor, Mrs. Anna Paraskeva.



Following her graduation from the Polemidia High School with the excellent grade of 19,5 / 20, Anna started working as a supervisor in a chocolate factory. During her 4 years of experience there, her employer noticed her managerial skills and encouraged her to study at the Productivity Center and one year later she received a Diploma of Industry Supervisor.

In 1996 at the age of 27, after the birth of her third child, she joined Remedica starting as an In Process Controller. Her dedication and enthusiasm and long working hours, soon led to her rapid promotion to Packing Line Supervisor.

It was because of her proven leadership and management skills, that she was chosen by Management to supervise the biggest department in the Company, which is her current position and she has set herself the target of increasing productivity to the maximum. ■



# A glimpse of Cyprus: The Mouflon and Cedar Valley



The island of Cyprus is one of the few homes left in the World of the endangered species, the Mouflon or as it is known locally, agrino. This wild sheep, is the largest animal in the natural fauna of the island with a mature male weighing about 35 kilos and the female some 10 kilos lighter. The scientific name used for many years was *Ovis orientalis orientalis* but extensive research has led to it being renamed as *Ovis gmelini ophion*. This reassignment means that the Cyprus Mouflon can be considered to be a relic of the first wild domestic sheep populations and were probably brought to Cyprus at least 12,000 years ago. As such, they most likely represent one of the closest descendants of the Paleolithic Anatolian wild sheep and this is because it inhabited an island where few other sheep were introduced so crossbreeding was extremely limited.

The male Mouflon can grow to a height of 1 metre and is a beautiful animal with horns that wrap round to form almost into a complete circle with a length of 70 cm. The females do not usually bear horns. The plentiful winter coat is predominantly light brown in colour with a light grey patch on the back next to a black collar. In summer, the coat is shorter and changes to a darker brown with a white underbelly. The young are very agile even when newborn and are thus able to avoid most of the threats presented by other birds and animals with the notable exception of man, especially when he has a gun.

All the Mouflon in Cyprus live in the Paphos forest, which covers 60,000 hectares at the western end of the island, although at one time they would have been abundant in most of the mountainous and semi-mountainous regions of the island. By the time that the island became a British colony in 1878 hunting with dogs had forced them to reside mainly in the Paphos forest and the introduction of hunting rifles led to a drastic reduction in numbers such that by the 1930s the numbers were estimated to have been as low as 15 and the species was in danger



of extinction. However, legislation introduced in 1938 and the declaration of the Forest as a Game Reserve Area in 1939, both intended to protect the mouflon, achieved their aim and numbers began to rise. Following the establishment of the Cyprus Republic, the species was given even greater protection by the establishment of the Forest as a Nature Reserve. All of these measures have raised the numbers to a level where the mouflon is no longer considered to be in danger of disappearing. It has become one of the symbols of Cyprus and it was the logo of Cyprus Airways.

The dense forestation of the Paphos Forest is ideally suited to these shy animals who live on the high region on the slopes of the Trypilos Mountain in the summer. This mountain, which stands at 1,362 metres, overlooks Cedar Valley and when the mountains become covered in snow then the sheep come down to lower pastures and will even

venture as far as the edge of the forest which gives visitors an opportunity to see these shy animals.

The existence and preservation of this forest is not only crucial to the survival of the Mouflon but also the cedar tree that is endemic in Cyprus, *Cedrus brevifolia*. This tree which is related to the Lebanon Cedar can grow to a height of 30 metres and live for 500 years. In part its longevity is due to its resistance to attack by insects. It is a protected species and somewhere in excess of 130, 000 specimens exist in Cyprus. Another endemic but smaller tree is the Golden Oak, *Quercus alnifolia*, which is an evergreen that grows to about 10 metres. It only grows on the igneous rocks of the Troodos mountain range where it occurs in extensive formations at altitudes of 600 to 1600 metres.

The Paphos Forest lies on the southern slopes of the western extremity of the Troodos

Mountains. Due to the difficulty in accessing this remote spot, once there, it is a haven of peace and tranquility. It is a favourite place for hikers and cyclists who are rewarded by some of the finest sights on the island. ■

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# Feature article: “TO PLOUMISTO PSOMI”

## A LOOK BACK ON THE HISTORY OF CYPRUS DECORATED BREAD

Bread is a staple food made by baking dough composed of flour of cereal origin, water, yeast and other minor ingredients.

At least, this is the technical definition of bread in most dictionaries and is how it is understood by billions of people across the planet, but not those who visit the decorated bread museum, To Ploumisto Psomi, in Limassol. Those privileged who visit the museum become acquainted with the history of both bread making and eating, which goes back at least thirty thousand years but most importantly, visitors appreciate the respect that the local community had for bread and the spiritual and cultural meanings it embodied.

At Ploumisto Psomi, visitors can view replicas of decorated breads intended as offerings in religious ceremonies, learn their histories and how they have been used across the centuries. The museum also features actual testimonies from people in various parts of the island, mainly elderly women, who have maintained these traditions and are eager and proud to pass them on to the next generation.

Bread has long been a part of many religious procedures and offerings to gods, but in the Christian world the role and symbolisms of bread were substantially upgraded. The visitor will realise the importance of the struggle for our “Daily Bread” and its symbolism into something more than a nutritional good.

Decorated breads were, however, also prepared and offered during all personal or family feasts as a way of expressing feelings and sharing them with other members of the family, relatives and friends. The Ploumisto Psomi museum has on display replicas of breads offered at weddings, births, Christenings and funerals as well as those offered at Christmas, Easter, and other feasts.

### Dorita Voskaridou: The Lady who turned dough into Art!

Dorita Voskaridou, the researcher, writer and the creator of the museum, prepared each replica bread in the museum. She is always at To Ploumisto Psomi to personally guide visitors through the exhibitions and to explain the symbolism of each bread decoration. Thanks to Ms. Voskaridou, visitors will be amazed to discover the hidden meaning behind the recurring symbols that are used to decorate traditional breads. In a video presentation about the history of traditional decorated bread in Cyprus, visitors to the museum are reminded of the social aspect of bread making and consumption.

The museum is managed by the non-profit cultural organization Technodromio, a very active team of people who provide a creative field for artists to express themselves in addition to organising all kinds of cultural events.

### Take Home a Piece of the Museum.

The museum has a shop where visitors can purchase dough-made artefacts, replicas of the traditional decorated bread (non-edible) and other contemporary dough creations made by Ms Voskaridou. Many of the visitors take the opportunity to take a piece of Cyprus tradition back home, either to keep as a souvenir or to give as a unique present to family or friends.

The museum is located in Limassol at 9, Gregori Afxentiou street (off Ayias Phylaxeos street).

More information on [www.technodromio.org](http://www.technodromio.org) ■

Photos by: Vassos Stylianou







Remedica is pleased to announce the  
**Pattihis Family Scholarship**

for the academic year

**2016/17**

**for the MSc Management degree in the department of  
Management Science and Innovation at  
University College London (UCL).**

**As well as covering the fees totalling £15,140, the Scholarship includes  
an offer of employment with Remedica  
(subject to successful completion of the degree).**

**Applications:**

Interested candidates should visit the following web page:

[www.mgmt.ucl.ac.uk/msc-management](http://www.mgmt.ucl.ac.uk/msc-management)

It is strongly recommended that applications for admission are submitted  
no later than four weeks before the scholarship deadline of 1<sup>st</sup> April 2016.

Remedica is a European-based (Cyprus) group specialising in the development,  
production and marketing of high quality, safe and efficacious pharmaceutical  
products and is dedicated towards a healthier world.

Remedica's products are marketed in over 100 countries  
(Europe, Asia, Africa, Australasia, South America, and North America).

