

Chemical and Biological News

NATIONAL AND INTERNATIONAL DEVELOPMENTS

Use of Forensic Mycology in Criminal Investigation

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The study of members of Kingdom Fungi is called as Mycology. Fungi are eukaryotic in nature and can be unicellular as well as multi-cellular. The use of mycological evidence for criminal investigations and its testing in court is called as Forensic Mycology. Most of the Fungi found are related to corpses and are also found in alternative substrates with high ammonia levels. One such Fungus is *Hebeloma syriense* which has earned itself the title 'The corpse finder'.

It plays a vital role in the process of decomposition of living beings. It is useful in recognising trace evidence; estimating time since death (post-mortem interval); determining time of deposition; investigating the cause of death; locating interred corpses; and biological warfare, etc. Application of Forensic Mycology is helpful in criminal investigations as well as testimonies in court. As of now, there have been significant applications of Forensic Mycology with respect to Forensic Medicine and Forensic Toxicology. There are certain legal aspects pertaining to the preparation of Fungi. The presence of Fungi inside the corpse can affect the constituents of the body.

Many species of fungi such as moulds and mushrooms can produce toxins and the action of most of them is long-term (for example, they are carcinogens) and some can

be cultured in VATS (block that acts as a light source when it is placed down) in large amounts and produce quicker-acting substances that have potential as biological weapons.

See: <https://legaldesire.com/use-of-forensic-mycology-in-criminal-investigation/>

COVID-19 Vaccine Update: Pfizer Says 90% Effective

No coronavirus vaccines have yet been approved for general use internationally, but several candidates have reached the final stages of testing. They are based on several different approaches, including active, inactivated, DNA, RNA/mRNA-based, virus vectors and protein subunits, and there are three test phases vaccines must pass before they are sent to regulatory authorities for approval.

BNT162b2 is a messenger RNA (mRNA) vaccine from American-German duo Pfizer and BioNTech. Pfizer and BioNTech announce vaccine candidate against covid-19 achieved success in first interim analysis from phase 3 study. Vaccine candidate was found to be more than 90% effective in preventing COVID-19 in participants without evidence of prior SARS-CoV-2 infection in the first interim efficacy analysis. The vaccine also claims that the effect can last at least a year.

Pfizer cautioned that the initial protection rate may still change as time goes on and made clear that the vaccine was unlikely to be available before the end of the year. Nevertheless, Pfizer's senior vice president of clinical development, Dr. Bill Gruber told the Associated Press: "We are very encouraged."

See: <https://www.dw.com/en/coronavirus-vaccine-90-effective-say-pfizer-and-german-company-biontech/a-55542947>

INTERNATIONAL COOPERATION

Kazakhstan proposes multilateral biological weapons control system

Kazakhstan has put forward proposals at the UNGA to establish a special multilateral body – the International Agency for Biological Safety to control threat of biological weapons. According to the Kazakh President, Kassym-Jomart Tokayev, the growth of trade protectionism and political nationalism has caused critical collapse of global cooperation and led to “global dysfunction”, which in turn undermines the prospects and hopes for a better world.

His reference to the Biological and Toxin Weapons Convention (BTWC) in the broader context of public health is noteworthy. It was one of five ideas to combat the pandemic, the other four being the upgrading of national health institutions; the removal of politics out of the vaccine; the revision of the International Health Regulations to increase capacities of the World Health Organisation (WHO); and the examination of the idea of a network of Regional Centres for Disease Control and Biosafety under the UN auspices.

See: <https://armscontrolaw.com/2020/10/06/biological-weapons-a-surprise-proposal-from-kazakhstan-worth-exploring/>

Chemical weapons watchdog ready to assist Russia in Navalny case

5 October 2020

Navalny fell ill on a flight in Siberia on Aug. 20 and was flown to Germany for treatment. German doctors say blood tests show he was poisoned with the Soviet-era nerve agent Novichok. The OPCW has collected its own samples to test at Germany's request.

Russia has said it has seen no evidence Navalny was poisoned, and denies any role in any attack.

The OPCW said in a statement on Monday its “Technical Secretariat is ready to provide the requested expertise and that a team of experts could be deployed on short notice.”

See: <https://uk.reuters.com/article/uk-russia-politics-navalny-chemicalweapons/chemical-weapons-watchdog-ready-to-assist-russia-in-navalny-case-idUKKBN26Q20I>

DISARMAMENT

OPCW Issues Two Fact-Finding Mission Reports on Chemical Weapons Use Allegations in Aleppo and Saraqib, Syria

2 October 2020

The FFM's activities regarding the allegation in Aleppo included visiting hospitals to collect medical records and witness accounts, conducting interviews, obtaining information, and gathering other data. The FFM also received environmental samples from State Parties. It further analysed a range of inputs, including witness testimonies, results of environmental sample analysis, epidemiological and technical analyses, and additional digital information

from witnesses and State Party technical experts.

Pertaining to this allegation in Aleppo, the information obtained and analysed, the composite summary of the interviews and the results of the laboratory analyses did not allow the FFM to establish whether or not chemicals were used as a weapon in the incident that took place in the neighbourhood of Al-Khalidiyah and its surroundings in North-West Aleppo on 24 November 2018.

The FFM's activities regarding the allegation in Saraqib included collecting medical records and other digital information, conducting interviews, and gathering other data.

The results of the analysis of all available data obtained up until the issuance of this report did not allow the FFM to establish whether or not chemicals were used as a weapon in the incident that took place in Saraqib, in the Idlib Governorate, on 1 August 2016

The FFM's reports on these two allegations of chemical weapons have been shared with States Parties to the Chemical Weapons Convention. The reports were also transmitted to the UN Security Council through the UN Secretary-General.

See: <https://www.opcw.org/media-centre/news/2020/10/opcw-issues-two-fact-finding-mission-reports-chemical-weapons-use>

BIOLOGICAL WEAPONS CONVENTION – MEETINGS OF EXPERTS

Background

In December 2017, the BWC Meeting of States Parties agreed on an intersessional programme from 2018 to 2020 consisting of annual Meetings of States Parties and

Meetings of Experts. The MSP agreed that the Meetings of Experts would be open-ended and will consider the following topics:

- MX1 - Cooperation and Assistance, with a Particular Focus on Strengthening Cooperation and Assistance under Article X
- MX2 - Review of Developments in the Field of Science and Technology Related to the Convention
- MX3 - Strengthening National Implementation
- MX4 - Assistance, Response and Preparedness
- MX5 - Institutional Strengthening of the Convention

The 2017 Meeting of States Parties agreed that:

- the purpose of the intersessional programme is to discuss, and promote common understanding and effective action on those issues identified for inclusion in the intersessional programme. The work in the intersessional period will be guided by the aim of strengthening the implementation of all articles of the Convention in order to better respond to current challenges.
- The Meetings of Experts for eight days will be held back to back and at least three months before the annual Meetings of States Parties. All meetings will be subject *mutatis mutandis* to the rules of procedure of the Eighth Review Conference. The Meetings of Experts are open-ended and all meetings will reach any conclusions or results by consensus.
- Each Meeting of Experts will prepare for the consideration of the annual Meeting of

States Parties a factual report reflecting its deliberations, including possible outcomes.

The Ninth Review Conference will consider the work and outcomes it receives from the Meetings of States Parties and the Meetings of Experts and decide by consensus on any inputs from the intersessional programme and on any further action.

Source: <https://meetings.unoda.org/section/bwc-mx-2020-background/>