GOBIERNO DE ARAGON
Instituto Aragonés de Administración Pública

Oferta complementaria de la Oferta de Empleo Público de 2007.

CUERPO/CATEGORIA: Funcionarios Superiores de la Administración de la Comunidad Autónoma de Aragón.

ESCALA/ESPECIALIDAD: Escala Facultativa Superior, Facultativos Superiores Especialistas, Biólogos.

TURNO: Libre.

CONVOCATORIA: BOA 11/07/2014

EJERCICIOS: Primero, tercero y cuarto.

PRIMER EXAMEN BIOLOGOS OEP 2007-2011

PRIMER TEMA: El Estado Autonómico: Origen y legitimidad de la administración de la Comunidad Autónoma de Aragón. Principios Generales de la distribución competencial entre el Estado y la Comunidad Autónoma de Aragón.

SEGUNDO TEMA: Principales problemas de contaminación puntual y difusa en Aragón en relación con la eutrofización. Plantes y programas que está desarrollando la Comunidad Autónoma para dar cumplimiento a la directiva marco del agua.

BIÓLOGOS.

TERCER EJERCICIO. SUPUESTO PRÁCTICO. 5 CASOS.

Caso 1

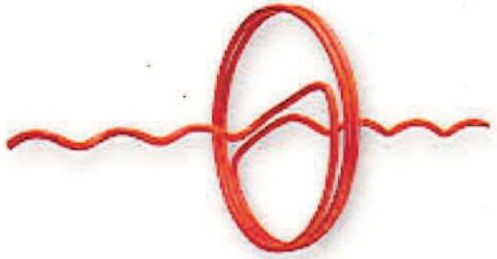
1.- Qué son y para qué se utilizan los objetos que aparecen en las láminas 1 y 2

2.- Identifique los lugares que aparecen en las láminas 5, 6 y 7:

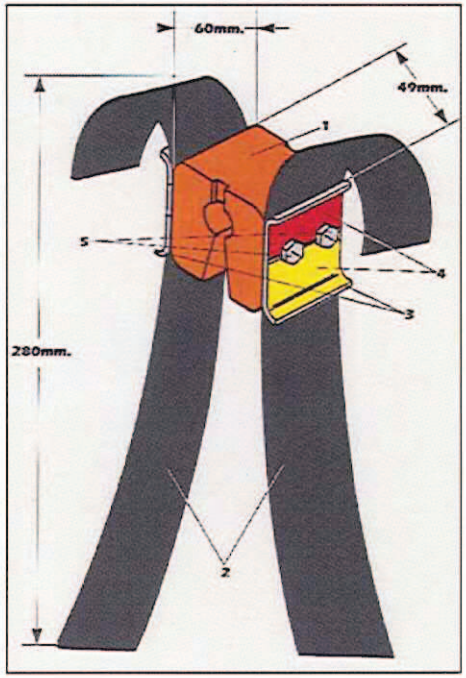
3.- Contesta brevemente a estas preguntas.

1. Cita 3 Reservas de caza de Aragón y la especie clave de cada Reserva.
2. Identifica el lugar o lugares donde son eliminados los residuos peligrosos en Aragón
3. Lugar con presencia de *Botaurus stellaris*, bigotudo y en ocasiones calamón *(Porphyrio porphyrio).*
4. Macizo con las mayores concentraciones de *Miniopterus scheirebersii* y la existencia de *Quercus robur*
5. Única masa aragonesa de *Quercus suber* de Aragón
6. Área con las mayores poblaciones de Aragón de *Lagopus mutus y Tetrao urogallus*
7. Macizo con abundancia de plantas endémicas del género *Sideritis* y *Oxytropis.*
8. Comarca aragonesa donde se han declarado 3 monumentos naturales
9. Comarcas o áreas de Aragón con bosques de sabina albar (*Juniperus thurifera*)
10. Zona donde destacan ríos de piedra y turberas, declarada zona Ramsar
11. Zona con una población relicta de *Borderea chouardii*
12. Cita tres zonas de Aragón donde recale en buen número la grulla
13. Espacio natural donde convive *Cypripedium calceolus* con una de las mayores densidades de *Gypaetus barbatus*
14. La única laguna salada de agua permanente en Aragón, con *Tadorna tadorna, Ferula loscosii, Microcnemum coralloides y Tamarix boveana.*
15. Río y cuenca con clima mediterráneo donde habitan *Lutra lutra, Neovison vison y Austropotamobius pallipes.*
16. Laguna con poblaciones de flora amenazada como *Puccinellia pungens, Lythrum flexuosum, Orchis palustris:..*
17. Último enclave conocido en Aragón de *Dendrocopus leucotus*
18. El trasiego de personas y la recolección amenazan al *Cypripedium calceolus.*
19. Citar dos iniciativas distintas de gestión de los purines -excluyendo abonado agrícola- y areas donde se ha puesto en marcha en Aragon
20. Citar tipos de residuos domésticos con recogida selectiva en Aragón y los sistemas integrados de gestión responsables de cada uno de estos grupos de residuos

Lámina 1



A	B
C	D



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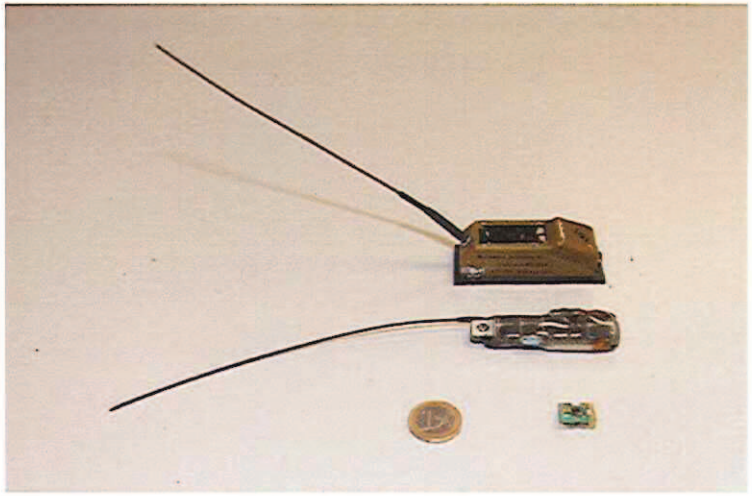

E	F
G	H

Lámina 5

A	B
C	D

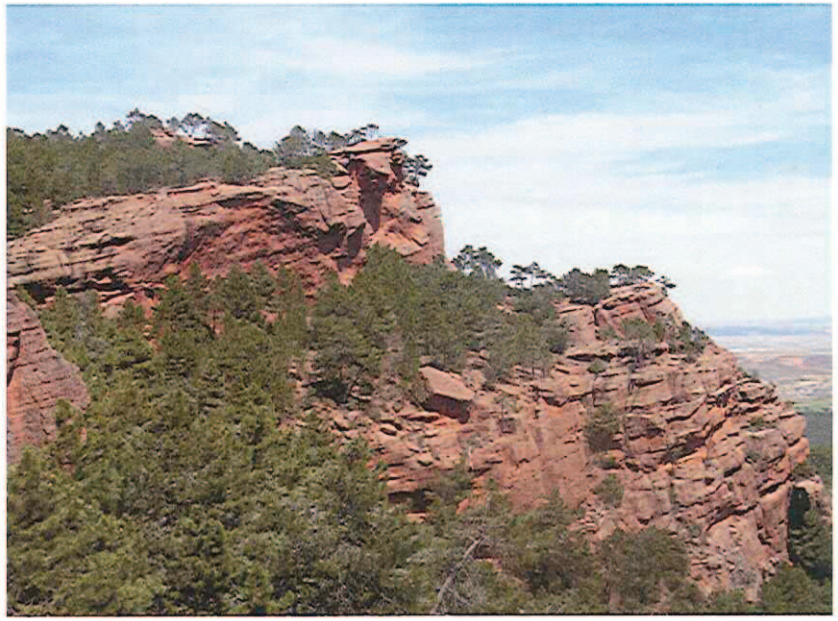

Lámina 6

E	F
G	H

Lámina 7

I	J
K	L

Caso 2

En el año 2011 un municipio de cierta provincia aragonesa deseaba construir, en suelo no urbanizable genérico, un vertedero para los residuos de obra menor generados por sus vecinos . La producción anual de residuos se estimaba en torno a 100 toneladas.

Teniendo en cuenta que el emplazamiento previsto no se encuentra dentro de ninguno de los espacios pertenecientes a la Red Natural de Aragón.

1. Califique la tipología de vertedero que debe solicitar el promotor (Ayuntamiento) y cite la normativa en que se basa.

2. Teniendo en cuenta que el vertedero finalmente se ha podido construir, cite y ordene cronológicamente los pasos que deben seguirse en la tramitación de este expediente desde el mismo momento en que el Pleno toma la decisión de construirlo hasta que inicia su explotación.

3. Haga referencia a la normativa de aplicación en cada caso.

Caso 3

Un proyecto de restauración que afecta a una infraestructura en el medio natural localizada en un punto de la comarca del Somontano de Barbastro entre 500 y 600 m de altitud y sobre suelos arcillosos presenta, entre otras acciones, el uso del siguiente listado de especies para revegetación:

Brachypodium retusum
Genista scorpius
Jasminus fruticans
Lolium perenne
Onobyichis hispanica
Pennisetum setaceum
Puccinelia pungens
Quercus ilex subsp. *ballota*
Rosmarinus officinalis
Spartium junceum
Thymus vulgaris
Trifolium pratense

Informe sobre la idoneidad de las especies propuestas en este listado justificando su adecuación o no para el uso previsto.

Caso 4

Una empresa adquiere una finca continua y prácticamente llana de 250 ha en Ejea, sin cursos de agua, dedicada a cereal de secano de año y vez, en un área no incluida en Red Natura 2000, y pretende realizar estas actuaciones:

- 1. Roturación de 33 ha en total, de pequeñas manchas de vegetación natural.
- 2. Concentración y unión de parcelas en un área de 70 ha, eliminando 2 km de linderos en total y 6000 m^2 de vegetación natural en manchas de un máximo de 900 m^2 cada una.
- 3. Puesta en regadío de 60 ha para maíz y alfalfa.

a- Valora los trámites administrativos de carácter ambiental que tiene que realizar en cada uno de los tres casos.

Al recabar información observas que la vegetación natural a roturar esta formada por:

- 10 ha dominadas por lastonares (*Brachypodium retusum*) con abundancia de plantas anuales.
- 7 ha de vegetación bastante rala y abierta, dominada por el tomillo (*Thymus vulgaris*)
- 15 ha dominadas por romero (*Rosmarinus officinalis*) y coscoja (*Quercus coccifera*), con presencia de *Dorycnium pentaphyllum* y *Lavandula latifolia.*
- 2 ha dominadas por sosa (*Suaeda vera*), con presencia de *Limonium ruizii* y *Salicornia ramosissima.*

Entre la comunidad de aves presentes en la finca destacan:
Cogujada montesina- población abundante
Ganga ortega- población escasa
Sisón- población media
Terrera común- población abundante
Alondra ricotí o de Dupont – nidificante escasa
Cernícalo primilla – colonia de cría distante 3 km.

b- Valora el impacto ambiental por separado de las tres actuaciones que se pretenden, en especial teniendo en cuenta las especies de aves citadas. Puedes proponer medidas correctoras o compensatorias.

c- Valora por separado el impacto sobre la biodiversidad que tendría la roturación de cada una de las 4 comunidades vegetales citadas.

Caso 5

Una comunidad de regantes decide vaciar una balsa de su propiedad en Almudévar, a 4km del río Gállego pero sin salida de agua. Los agentes de protección de la naturaleza alertan del hecho y son enviados para verificar los trabajos. Son extraídas: 12 barbos culirroyos (*Barbus haasi*), 158 gambusias (*Gambusia holbrooki*), 38 carpas (*Cyprinus carpio*), 3 bermejuelas (*Achondrostoma arcasii o Chondrostoma arcasii*), 1 lucio (*Esox lucius*).

1. ¿La comunidad de regantes debería haber avisado antes del vaciado para poder realizar el rescate? ¿Quién debería poner los medios y materiales para poder realizar el rescate de peces?
2. ¿Qué debería hacerse con los peces capturados, se deberían soltar tal cual en el río más próximo, el Gállego?, ¿podrían consumirse los peces por parte de los allí presentes?
3. ¿Esa comunidad de peces puede ser real o hay algo que te haga sospechar que esa comunidad de peces es inventada?
4. ¿Cual es la especie dominante en esa comunidad de peces? Explica brevemente la limnología (plancton, bentos, etc.) que pueda tener esa balsa a partir de su comunidad de peces.

BIÓLOGOS.

CUARTO EJERCICIO. IDIOMA.

INGLÉS.

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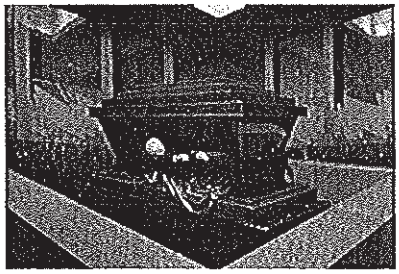
Health » News

Lenin's Body Improves with Age

Russian scientists have developed experimental embalming methods to maintain the look, feel and flexibility of the Soviet Union's founder's body, which is 145 years old today

April 22, 2015 | By Jeremy Hsu |



Courtesy of Alexei Yurchak

For thousands of years humans have used embalming methods to preserve dead bodies. But nothing compares with Russia's 90-year-old experiment to preserve the body of Vladimir Lenin, communist revolutionary and founder of the Soviet Union. Generations of Russian scientists have spent almost a century fine-tuning preservation techniques that have maintained the look, feel and flexibility of Lenin's body. This year Russian officials closed the Lenin Mausoleum in Moscow's Red Square so that scientists could prepare the body for public display again in time for the Soviet leader's 145th birthday anniversary today.

The job of maintaining Lenin's corpse belongs to an institute known in post-Soviet times as the Center for Scientific Research and Teaching Methods in Biochemical Technologies in Moscow. A core group of five to six anatomists, biochemists and surgeons, known as the "Mausoleum group," have primary responsibility for maintaining Lenin's remains. (They also help maintain the preserved bodies of three other national leaders: the Vietnamese leader Ho Chi Minh and the North Korean father–son duo of Kim Il-sung and Kim Jong-il, respectively.) The Russian methods focus on preserving the body's physical form—its look, shape, weight, color, limb flexibility and suppleness—but not necessarily its original biological matter. In the process they have created a "quasibiological" science that differs from other embalming methods. "They have to substitute occasional parts of skin and flesh with plastics and other materials, so in terms of the original biological matter the body is less and less of what it used to be," says Alexei Yurchak, professor of social anthropology at the University of California, Berkeley. "That makes it dramatically different from everything in the past, such as mummification, where the focus was on preserving the original matter while the form of the body changes," he adds.

Yurchak has been writing a book describing the history of Lenin's body, the history of the science that arose around it, and the political role that the body and science have played in the Soviet and post-Soviet eras. Much of his material comes from original interviews with Russian researchers working at the "Lenin Lab" (Yurchak's nickname for the institute). He has already published a paper on this project in the journal *Representations,* and previously published a book, "Everything Was Forever, until It Was No More: The Last Soviet Generation."

When Lenin died in January 1924, most Soviet leaders opposed the idea of preserving his body beyond a temporary period of public display. Many envisioned a burial in a closed tomb on Moscow's Red Square. But the cold winter kept Lenin's publicly displayed corpse in fair condition for almost two months as huge crowds waited to pay their respects. That also gave the leaders time to reconsider the idea of preserving the body for a longer period. To avoid any association of Lenin's remains with religious relics, they publicized the fact that Soviet science and researchers were responsible for preserving and maintaining it.

The leaders eventually agreed to try an experimental embalming technique developed by anatomist Vladimir Vorobiev and biochemist Boris Zbarsky. The first embalming experiment lasted from late March to late July in 1924. Such an effort was complicated by the fact

that the physician who carried out Lenin's autopsy had already cut the body's major arteries and other blood vessels. An intact circulatory system could have helped deliver embalming fluids throughout the body.

Lenin Lab researchers eventually developed microinjection techniques that used single needles to deliver embalming fluids to certain bodily parts, preferentially places where cuts or scars from past treatments already existed, Yurchak says. They also created a double-layered rubber suit to keep a thin layer of embalming fluid covering Lenin's body during public display; a regular suit of clothes fits over the rubber suit. The body gets reembalmed once every other year; a process that involves submerging the body in separate solutions of glycerol solution baths, formaldehyde, potassium acetate, alcohol, hydrogen peroxide, acetic acid solution and acetic sodium. Each session takes about one and a half months.

Such painstaking maintenance goes above and beyond common embalming methods used to preserve bodies for funerals and medical education. "Most embalming uses a mix of formaldehyde and alcohol or water, which is called formalin," says Sue Black, director of the Center for Anatomy and Human Identification at the University of Dundee in Scotland. "This has good preservation qualities and has good antifungal properties. Bodies embalmed in this way have a shelf life of tens of years."

Both conventional embalmers and the Lenin Lab face several common challenges, Black explains. Bodies must be kept from drying out so that they don't mummify. Heavy use of formalin can also turn human tissue the color of "canned tuna fish," which is why funeral embalmers use colorants in their embalming fluids to make the recently deceased look a healthy pink. Funeral embalmers also apply cosmetics for temporary funeral displays prior to burial.

But bodies preserved in formalin become discolored, stiff and fragile over the long run. A modern alternative called the Thiel soft-fix method combines a different mix of liquids—including nitrate salts—to maintain the natural color, feel and flexibility of the tissues. Such a method is useful for medical education and training. "Plastination," a technique popularized by Body Worlds exhibits around the world, replaces all the liquid in bodies with a polymer to transform bodies into hard, static sculptures frozen in time.

Although such modern approaches were not available to the Lenin Lab, a technique such as plastination would not have been acceptable in any case, because it creates unnatural stiffness in preserved bodies. To maintain the precise condition of Lenin's body, the staff must perform regular maintenance on the corpse and sometimes even replace parts with an excruciating attention to detail. Artificial eyelashes have taken the place of Lenin's original eyelashes, which were damaged during the initial embalming procedures. The lab had to deal with mold and wrinkles on certain parts of Lenin's body, especially in the early years. Researchers developed artificial skin patches when a piece of skin on Lenin's foot went missing in 1945. They resculpted Lenin's nose, face and other parts of the body to restore them to their original feel and appearance. A moldable material made of paraffin, glycerin and carotene has replaced much of the skin fat to maintain the original "landscape" of the skin.

At the height of activity from the 1950s to the 1980s, the lab employed up to 200 people who did research on subjects ranging from the aging of skin cells to skin transplantation methods, Yurchak says. The institute temporarily lost government funding in the 1990s after the fall of the Soviet Union, but survived on private contributions until government money returned at more modest levels.

During his book research, Yurchak discovered that the Lenin Lab's efforts have even led to spinoff medical applications. One technique influenced Russian development of special equipment used to keeping the blood flowing through donor kidneys during transplantation. In another case veteran lab researcher Yuri Lopukhin and several colleagues developed a "noninvasive three-drop test" to measure cholesterol in skin tissue in the late 1980s. The Russian invention eventually received a patent in 2002 and was commercialized by the Canadian company PreVu as "the world's first and only noninvasive skin cholesterol test" for patient home care. That's one legacy of Lenin that neither the Soviets nor the West could have imagined a century ago.