

Current Edge: Daily Brief

19th September 2025

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NEWS IN SHORT

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QUOTES OF THE DAY

"The best way to predict the future is to create it." – **PETER DRUCKER**

WHAT THE OTHERS SAY

"There should be a global, UN-backed arms, economic and diplomatic embargo of Israel until it stops its campaign of extermination in Gaza. And if states refuse to cooperate and continue to arm and fund Israel, they must be considered partners in crime with Tel Aviv." – **DAWN, PAKISTAN**

News / Explained / Explained Sci-Tech / How scientists found an ant which gives birth to two species

How scientists found an ant which gives birth to two species

The research was published in the journal *Nature* earlier this month. It was carried out by a team of international scientists based at different institutes in France, Italy, Bulgaria, and Austria.

IE Explained;

Syllabus: Pre/Mains – Science & Tech [Link](#)

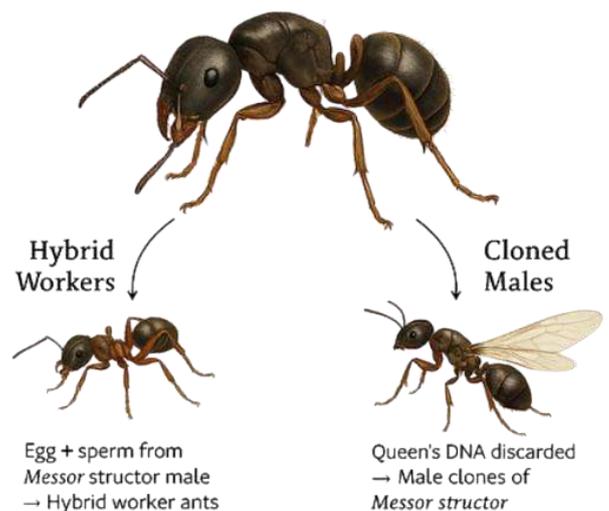
Why in News?

Study in *Nature* (Sept 2025): Queens of **Mediterranean harvester ant *Messor ibericus*** can give birth to males of another species (***Messor structor***).

Key Discovery

- First known case: single organism → offspring of **two species**.
- *M. ibericus* queens produce:
 - **Female queens (*M. ibericus*)**

- **Hybrid sterile workers (*M. ibericus* × *M. structor*)**
- **Male drones (*M. structor*)**



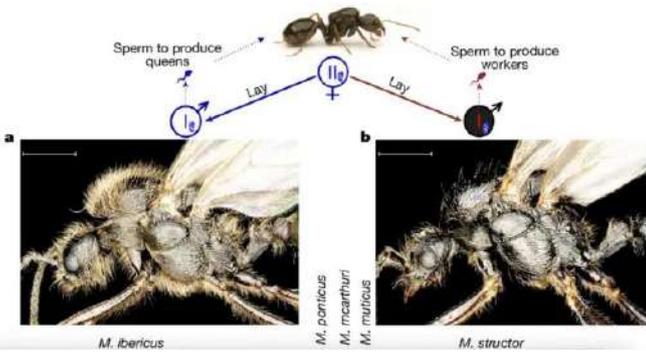
Suspicion & Evidence

- Workers = **hybrids**, 50% DNA of *M. structor*.

- Colonies existed where **no M. structor colonies nearby**.
- DNA tests: **M. structor males inside M. ibericus colonies**, with **M. ibericus mitochondrial DNA** → maternal origin.

Mechanism

- Queens store sperm in **spermatheca**.
- ~10% eggs = **entirely M. structor**, not hybrid.
- Process: **cloning sperm genome** + maternal mitochondria → pure M. structor males.



Evolutionary Advantage

- Producing **two species of males**:
 - **M. ibericus sperm** → new queens.
 - **M. structor sperm** → hybrid workers + new M. structor males.
- Ensures **colony survival, diversity, resilience**.

Significance

- Challenges classical rule: **offspring = same species as parents**.
- Parallel drawn: **“human having chimp babies”**.
- New insight into **speciation, hybridisation, reproductive strategies** in evolution.

Test Your Knowledge 01

Q1. In the context of recent scientific discoveries, what is unique about the reproduction of Messor ibericus ants?

- (a) Queens can reproduce without fertilisation (parthenogenesis).
- (b) Queens can give birth to offspring of two different species.
- (c) Queens produce only sterile worker ants through cloning.
- (d) Male ants carry both paternal and maternal mitochondrial DNA.

Hint: The “two species offspring” aspect is the unique discovery.

News / Explained / Why Army is rushing to procure new radars after Operation Sindoor drone breaches

Premium

Why Army is rushing to procure new radars after Operation Sindoor drone breaches

Radars are the eyes of modern air defence systems. Learning from the experience of Op Sindoor, the Army is acquiring upgraded radar systems to tackle swarms of low-cost drones with small radar signatures

IE Explained; By Amrita Nayak Dutta;
Syllabus: Pre/Mains – Security [Link](#)

Why in News?

Army fast-tracking procurement of new radars after **Operation Sindoor (May 2025)** exposed gaps against Pakistani drone swarms.

Radar Basics

- **RADAR** = Radio Detection and Ranging
- Components: transmitter + receiver
- Functions: detect, track, identify, calculate trajectory
- Types:
 - **Surveillance radars** → detect, monitor skies
 - **Fire control radars** → guide weapons to targets
- Key metric: **Radar Cross Section (RCS)** → detectability (low RCS = stealthy)



Current AD Radars

- **IAF:** High/Medium Power Radars (HPRs, MPRs) for long range, high altitude threats (jets, AWACS)
- **Army + IAF:** Low Level Light Weight Radars (LLLRs) for low altitude, small objects
- **IAF fire control radars:** 3D Central Acquisition, Rajendra
- **Army fire control radars:** Flycatcher (USFM upgrade), AD Tactical Control

Why Upgrade Needed?

- **Op Sindoor:** hundreds of cheap drones breached Indian airspace, camouflaged few attack drones
- Old radars struggled with low-RCS, low-altitude swarms
- Trend in modern warfare: drones, swarms, Hamas-Israel case
- Need: more LLLRs + advanced fire control radars capable of friend-foe ID

New Procurement

- 45 Low Level Light Weight Radars (Enhanced)
- 48 Air Defence Fire Control Radar – Drone Detectors (ADFCR-DD)
- 10 Low Level Light Weight Radars (Improved)
- Capabilities:
 - Detect + track small drones, swarms
 - Prioritise threats
 - Transmit target data to AD weapons (up to 10 km)
 - ADFCR-DD: detect, classify, control AD guns/missiles

India’s AD Infrastructure

- **Systems:** Akash missile, S-400, AD guns
- **Army:** Akashteer → real-time common air picture, integrated ops
- **IAF:** Integrated Air Command & Control System (IACCS) → integrates all AD assets, controls offensive + defensive ops
- **Mission Sudarshan Chakra:** build comprehensive AD shield
- **Recent:** DRDO tested Integrated Air Defence Weapon System (IADWS)

Test Your Knowledge 02

Q2. In the context of radar technology, the term Radar Cross Section (RCS) refers to:

- The area covered by radar beams in circular scanning
- The effective reflectivity of a target to radar signals
- The cross-sectional size of radar antenna dish
- The minimum distance at which radar can detect targets

Hint: RCS = detectability, key in stealth design. (Reflectivity)

NEWS IN SHORT

Bima Sugam portal launched: Single digital marketplace for all kinds of insurance

Why in News?

Bima Sugam portal launched (Sept 2025) as India’s first unified digital marketplace for all types of insurance.

Key Features

- **Single platform:** Life, health, general (motor, travel, property, agriculture).
- **Functions:** Buy, sell, renew, manage, claim.
- **Integration:** Insurers, agents, brokers, banks, aggregators under one roof.
- **Storage:** Secure digital policy repository.
- **Model:** Low-cost, minimal charges; equity participation by insurers.
- **Phased rollout:** Info hub → full transactions.

Significance

- **Digital Public Infrastructure (DPI)** for insurance (like UPI for payments).
- **Transparency:** Standardized processes, minimal commissions.
- **Innovation:** Sandbox products, faster adoption.
- **Customer benefit:** Compare, access, service at one place.
- **Industry benefit:** Inclusive, tech-driven ecosystem.