EBOCC Online Workshop 2: Labelling and storage

04.11.2026, Teams







From field specimen to lasting record

Handling, labelling and storage – insights from the French experience

François Dusoulier · Muséum national d’histoire naturelle · EBOCC Online workshop, 4th November 2026

Récolnat
RÉSEAU NATIONAL DES COLLECTIONS NATURALISTES
MUSÉUM NAL HIST NATURELLE

Why are specimens critical?

Interface

Species are described from a specimen, which links the world of scientific language with the world of organisms.

Materiality

A specimen can always be re-examined over time. Its taxonomic assignment invariably evolves as science advances.

Data reservoir

A specimen is a reservoir of environmental, chemical and molecular data for today's and tomorrow's science.

Witness

A specimen bears witness to an occurrence at a given place and time.

Validation

A specimen is the key to validation that can be challenged over time, the foundation of the scientific method.

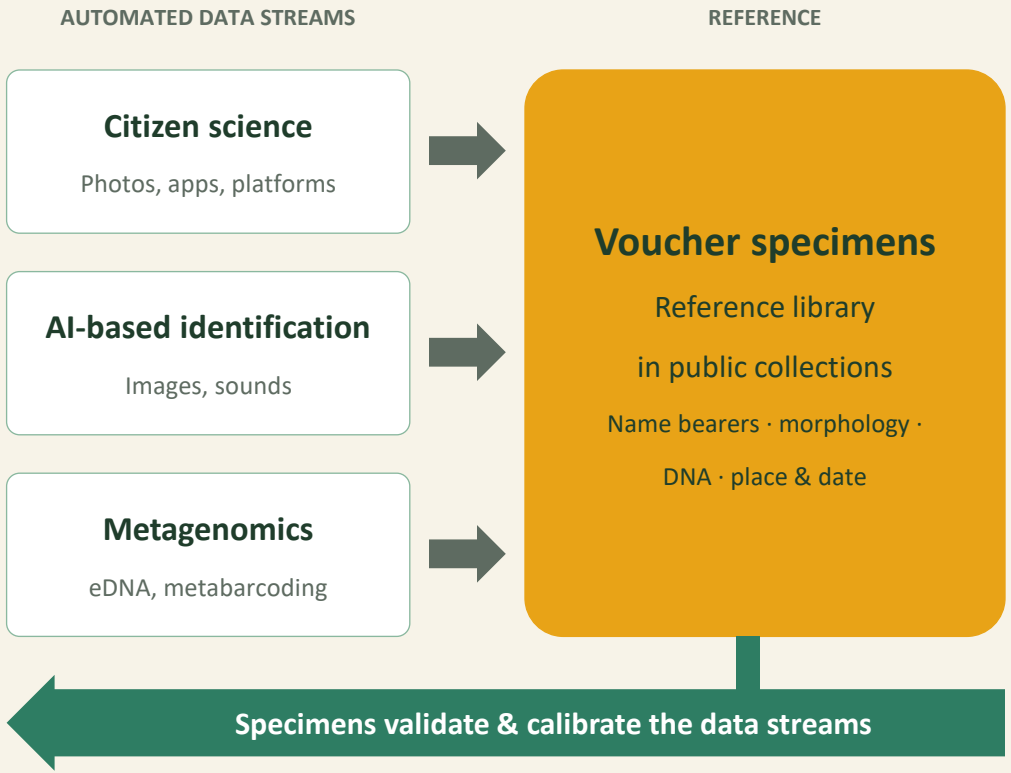


Carpocoris fuscispinus
(Boheman, 1851)

From data deluge to quality assurance

New technologies – from citizen science to AI-based identification and metagenomics – are producing data at volumes far exceeding those of traditional methods.

This is shifting our collections from being the only source of durable information to serving as **the fundamental reference library that provides quality assurance** for the world of automated monitoring.



Intermediate storage: from field to preparation

Fieldwork → Temporary storage → Preparation

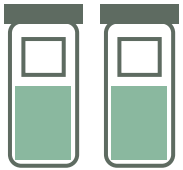
Dry storage



Freezer: yes

- Insect papering ("papillote") or tube
- Label placed with the specimen
- May go in the freezer until preparation

In fluid (ethanol)



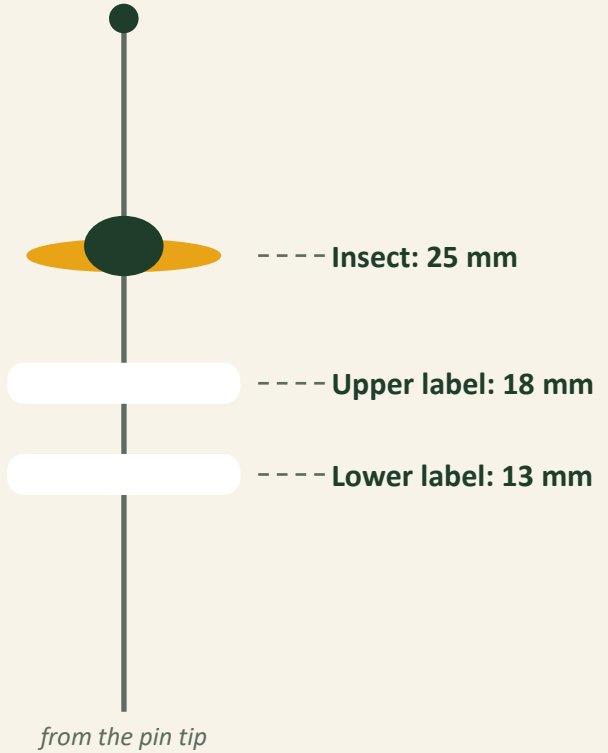
Freezer: no

- Specimens kept in ethanol
- Can stay as they are until preparation
- Do not place in the freezer

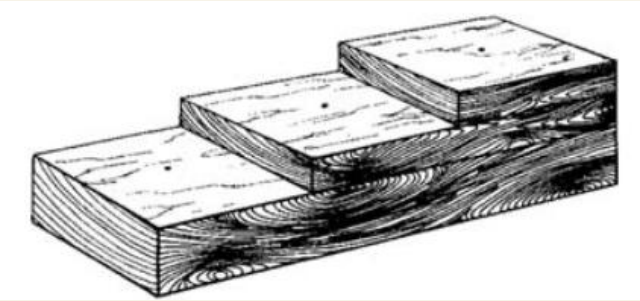
Never leave a tube without a label inside!

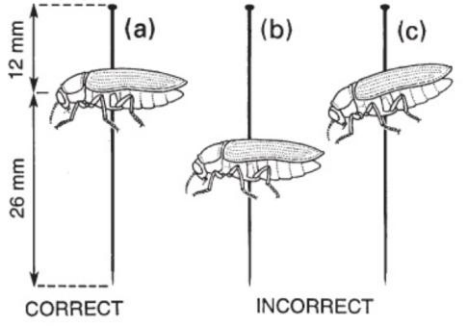
Handling & spreading

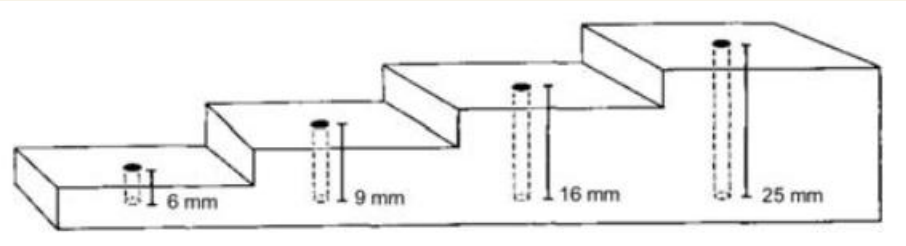
- Simple preparation: Lepidoptera, hoverflies (Syrphidae) and bees (Apoidea) pinned through the thorax
- Always hold the specimen by the head of the pin
- Antennae extended forwards
- Symmetrical leg positioning is not required
- Wings spread on either side of the abdomen
- Males: genitalia easy to pull out or extract, depending on operator experience

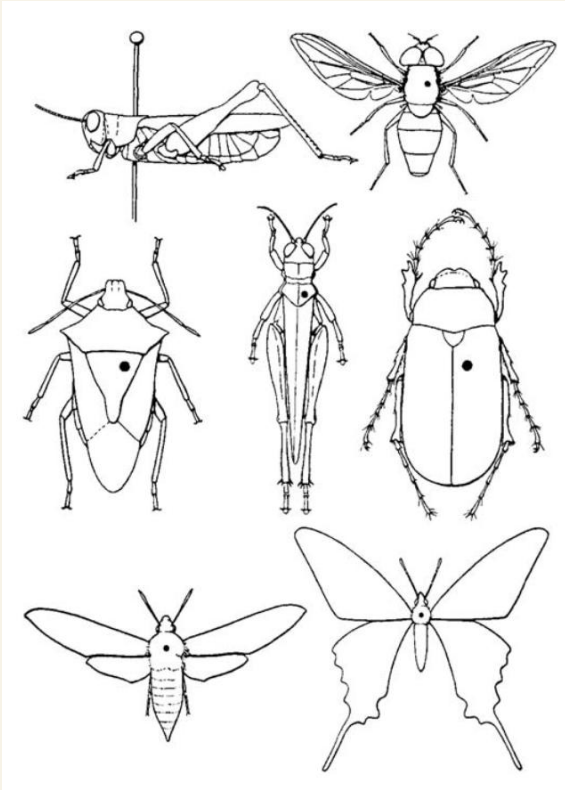


Handling & spreading



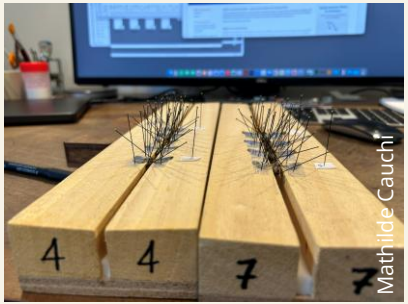


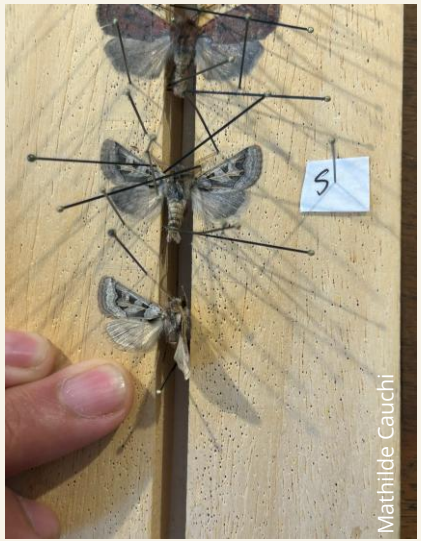


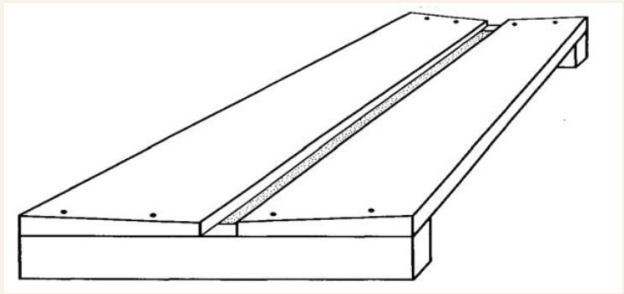


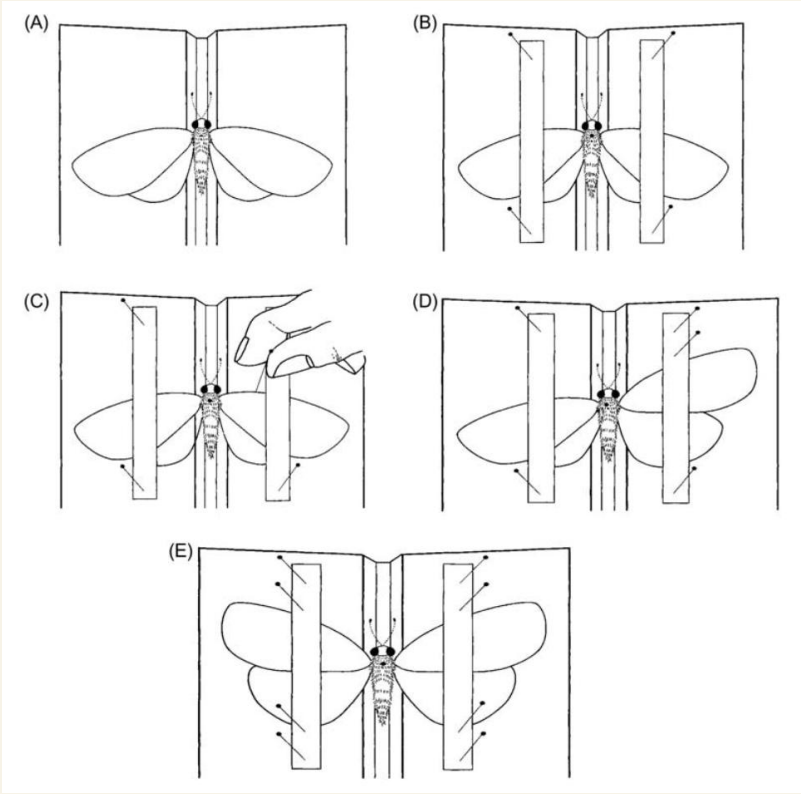
Gibb & Oseto (2020)
Arthropod collection and identification: field and laboratory techniques

Handling & spreading









Gibb & Oseto (2020)
Arthropod collection and identification: field and laboratory techniques

Labelling

Labels are public archives that accompany the specimen at all times.

UPPER LABEL – where & when?

Essential

- Country, Municipality (département), locality (toponym)
- GPS coordinates, WGS84, max. 5 decimals; altitude
- Date and collector (leg.)
- Unique specimen number (database link; QR code possible)

Optional

- Host plant, habitat, interactions…

LOWER LABEL – what?

Essential

- Scientific name: Genus species + author of name availability (nominal complex), or Genus sp. or Family if not resolved
- Name of the determiner (det.)

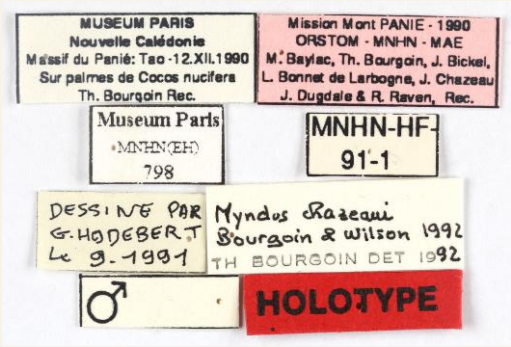


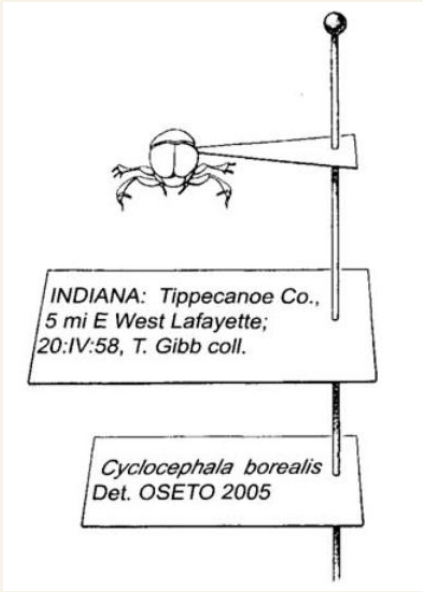
Other taxonomists or experts may add labels to confirm the specimen's identification or provide an alternative taxonomic attribution.

Labels are best printed by inkjet print or written with permanent ink on thick (> 110g/m²) acid-free paper

Labelling









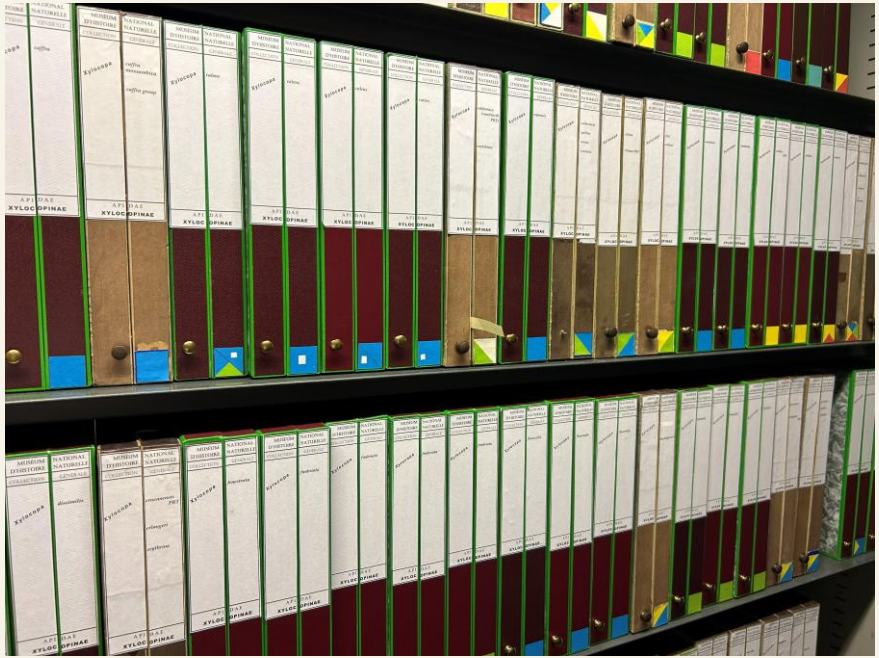
Gibb & Oseto (2020)
Arthropod collection and identification: field and laboratory techniques

Storage & curation

Environment	Controlled temperature and relative humidity
Curation	Specimens classified so that each can be found and queried in databases
Access	On-site consultation for expertise and research

Storage & curation



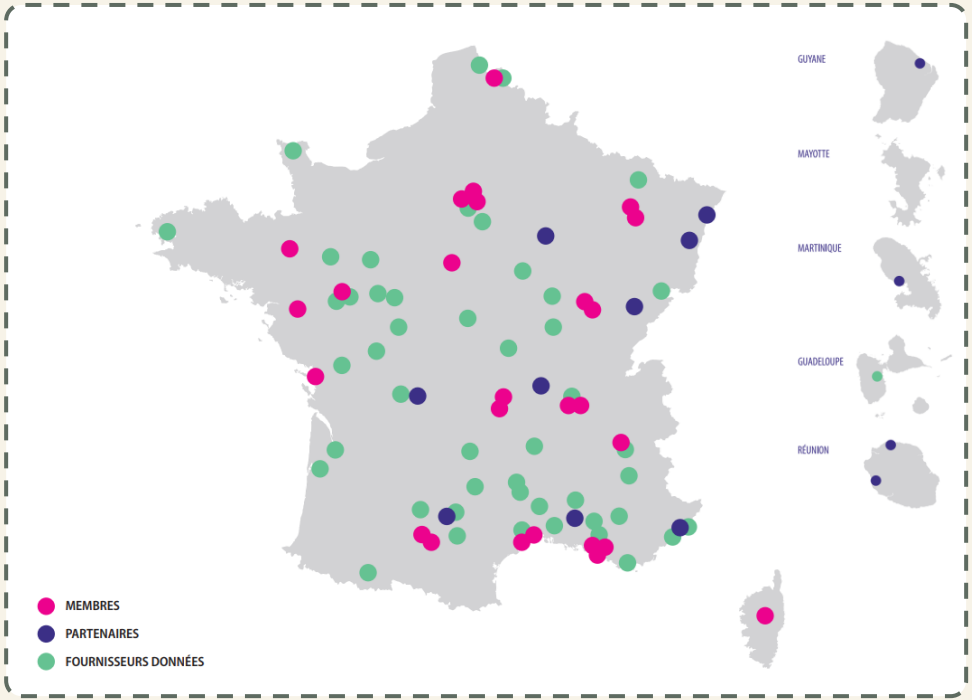


Récolnat: the French research infrastructure

- Recolnat: the national network of naturalist collections in France
- Brings together member institutions and their collections
- Common framework for data and specimen management

Récolnat

92 26 membres
66 partenaires



DiSSCo: a European research infrastructure

Distributed System of Scientific Collections

1.5 billion specimens

5,000 scientists

400+ institutions

23 countries

- One European collection: digitally unifies natural science collections under common access, curation and policies
- FAIR data: findable, accessible, interoperable, reusable
- Built on CETAF (since 1996), whose collections represent over 80% of described species
- Community services: ELViS (loans & visits), DiSSCover (curation & annotation), Digital Specimen Repository…



In practice: agreements

Conventions
between operators and the institutions that own the collections

Public ownership
guaranteed throughout the whole life of the specimens

Long-term access
to the specimens, written into the agreement

The cycle of taxonomic knowledge

Naturalists
Observe and collect specimens in the field

→

Taxonomists
Delimit species, describe and revise them

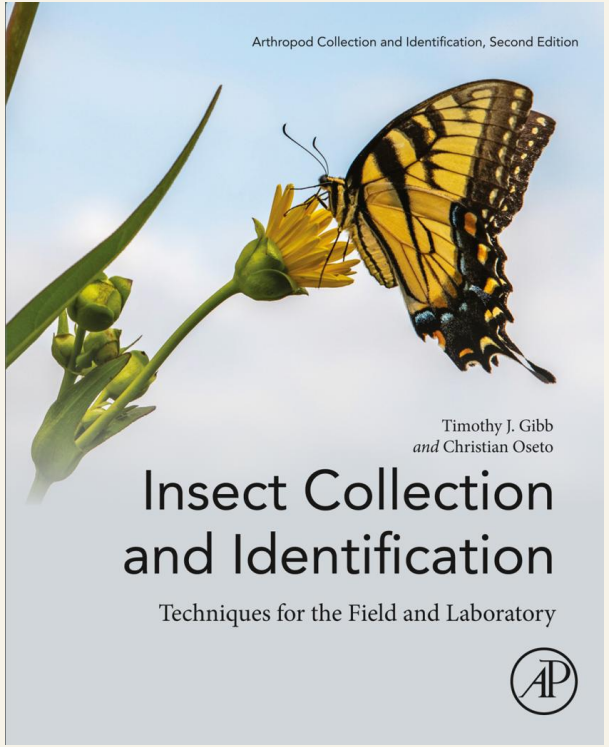
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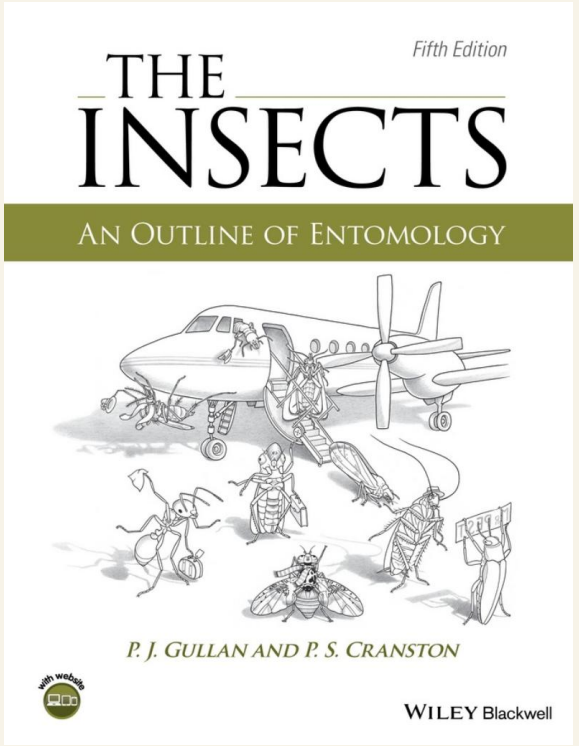
Experts
Identify by applying taxonomists' work to attribute names to specimens (they do not identify species!)

Specimens in public collections link the three roles

Risk: a mismatch between the names used by taxonomists and by the experts who report to biodiversity conservation policies.

References


Arthropod Collection and Identification, Second Edition
Timothy J. Gibb
and Christian Oseto
Insect Collection and Identification
Techniques for the Field and Laboratory


Fifth Edition
THE INSECTS
AN OUTLINE OF ENTOMOLOGY
P. J. GULLAN AND P. S. CRANSTON
WILEY Blackwell

Thanks for your attention



For further information or enquiries, please contact me at:

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Récolnat

MINISTÈRE DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE
Liberté Égalité Fraternité

INVESTIR L'AVENIR

MUSÉUM NATIONAL D'HISTOIRE NATURELLE

Funded by the European Union

DISSCO
Distributed System of Scientific Collections

Thank you for your attention!

Future EBOCC product:

Laboratory and storage protocols

- Late December (TBC)

For any additional questions:

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