Biological intercalibration: Invertebrates 2017

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Objectives

- The biological intercalibration should promote international harmonisation of monitoring practices
- An important tool in this work is an inter-laboratory quality assurance test
- The bias between analyses carried out by the individual participants of the ICP Waters Programme should be identified and controlled

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Objectives

- Evaluate the quality of the taxonomic work on the biological material delivered to the Programme centre
- Harmonise the biological database
- Maintain and improve the taxonomic skill of the participating laboratories

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Methods

- Two test samples of invertebrates is composed by the programme subcentre and sent to participating laboratories
- The results are controlled and evaluated by the Programme subcentre
- Feedback is given directly to the individual laboratory and in reports

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The test samples

- Made of material sent from each participating laboratory
- Material added by the subcentre

It is important to use animals from the home region of each laboratory

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The test samples

An example:

The test samples to Switzerland 2015 was composed of material from: Switzerland, Norway and Sweden

Fauna Europea is used to control the geographical relevance of the test material

http://www.faunaeur.org/

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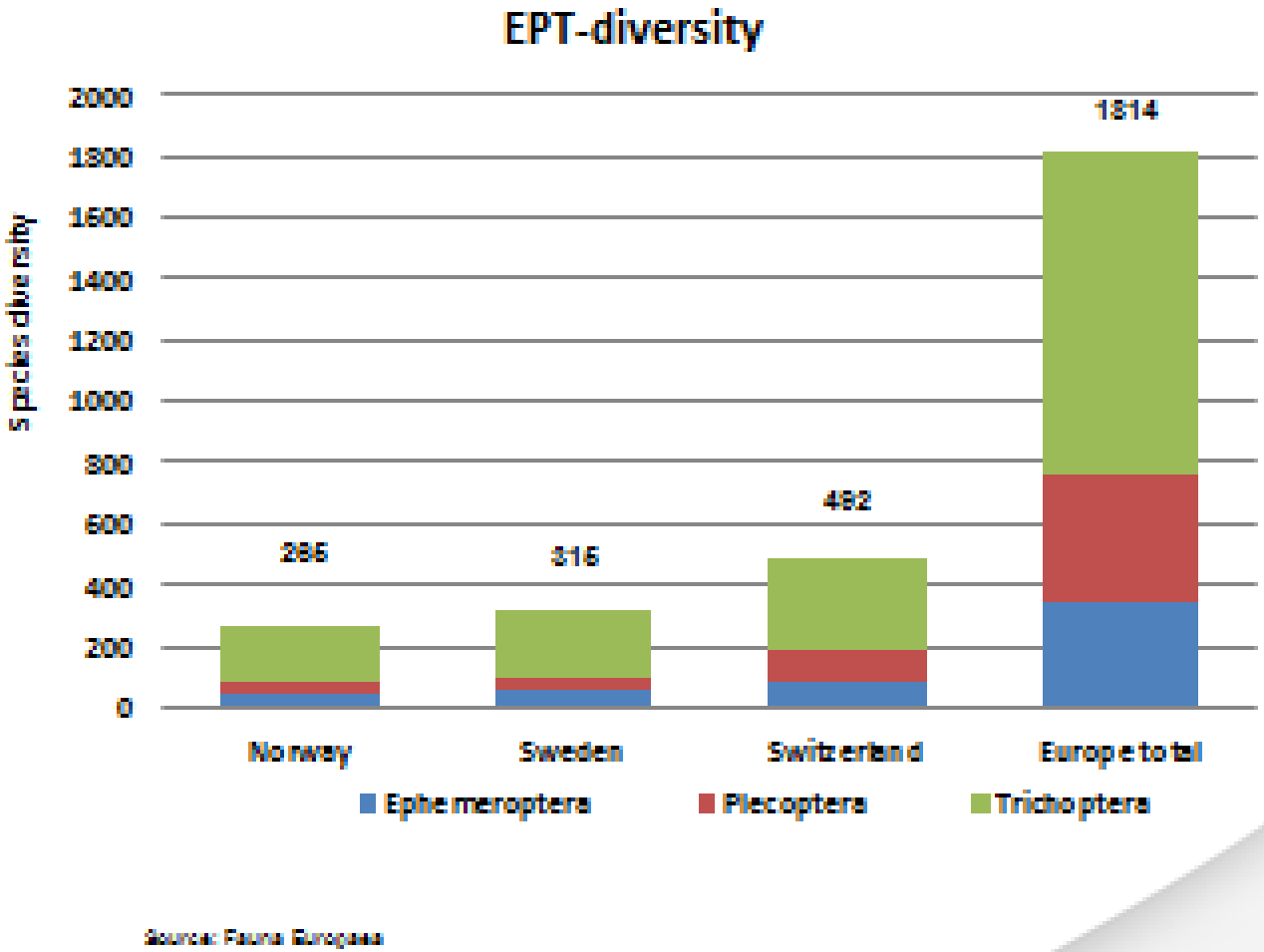
Total number of species within the insect orders Ephemeroptera, Plecoptera and Trichoptera in Norway, Sweden and Switzerland



Source: Fauna Europaea

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The Quality index (Qi)

The index is based on the identification of individuals to correct species, genus and the % identified:

Qi = % correct species/10 * % correct genus/10 * % identified individuals/100

Qi will be a number between 0 and 100. It will decrease exponentially by faults made on genus level and by low % identified

A Qi above 80 is regarded as good taxonomic work

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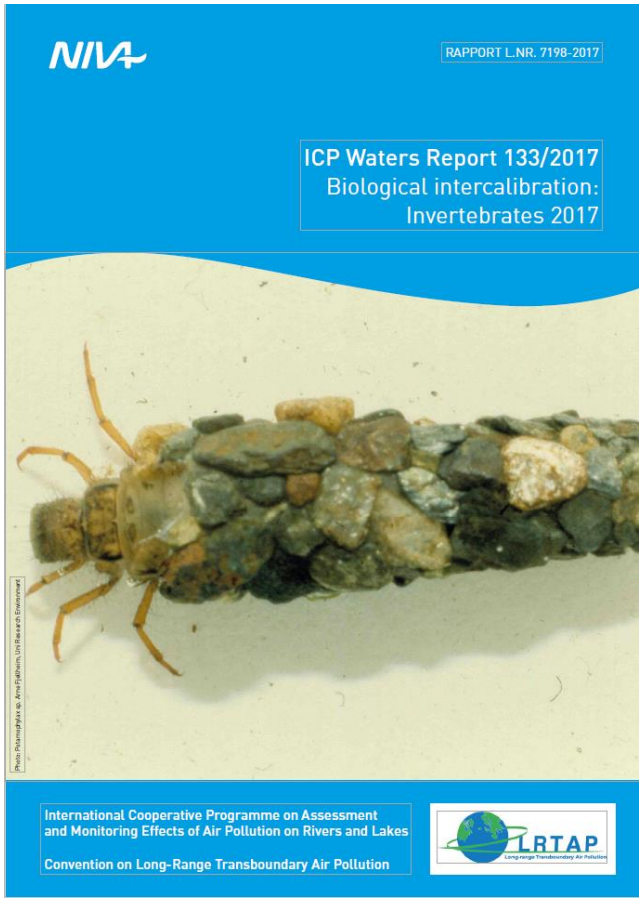
Biological intercalibration 2017

- The report was published in the autumn



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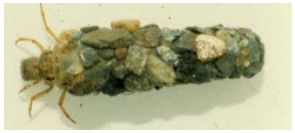
Results

The results will be presented separately for:

- **Mayflies (Ephemeroptera)**

- **Stoneflies (Plecoptera)**

- **Caddisflies (Trichoptera)**



- **Other groups**

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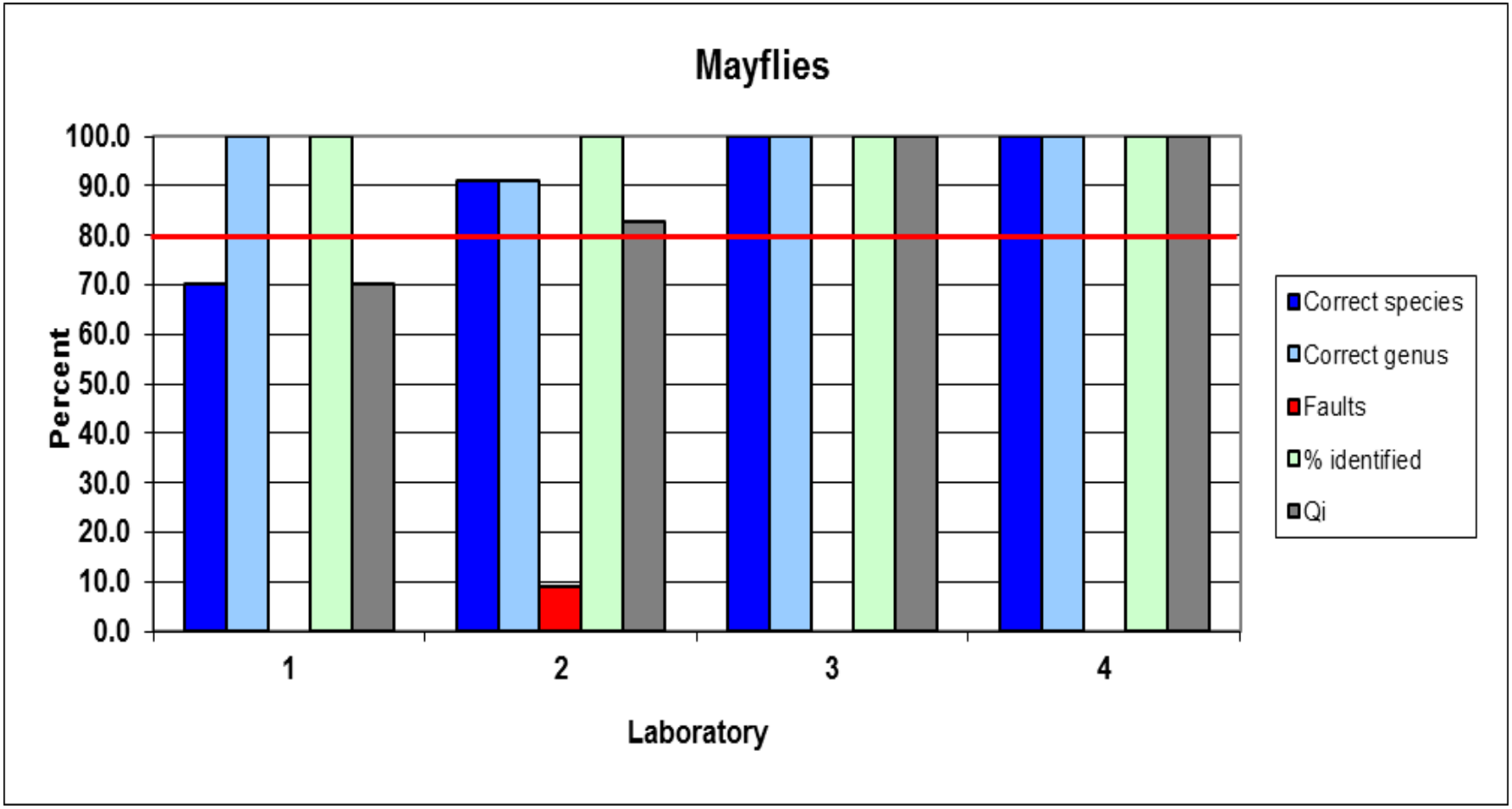
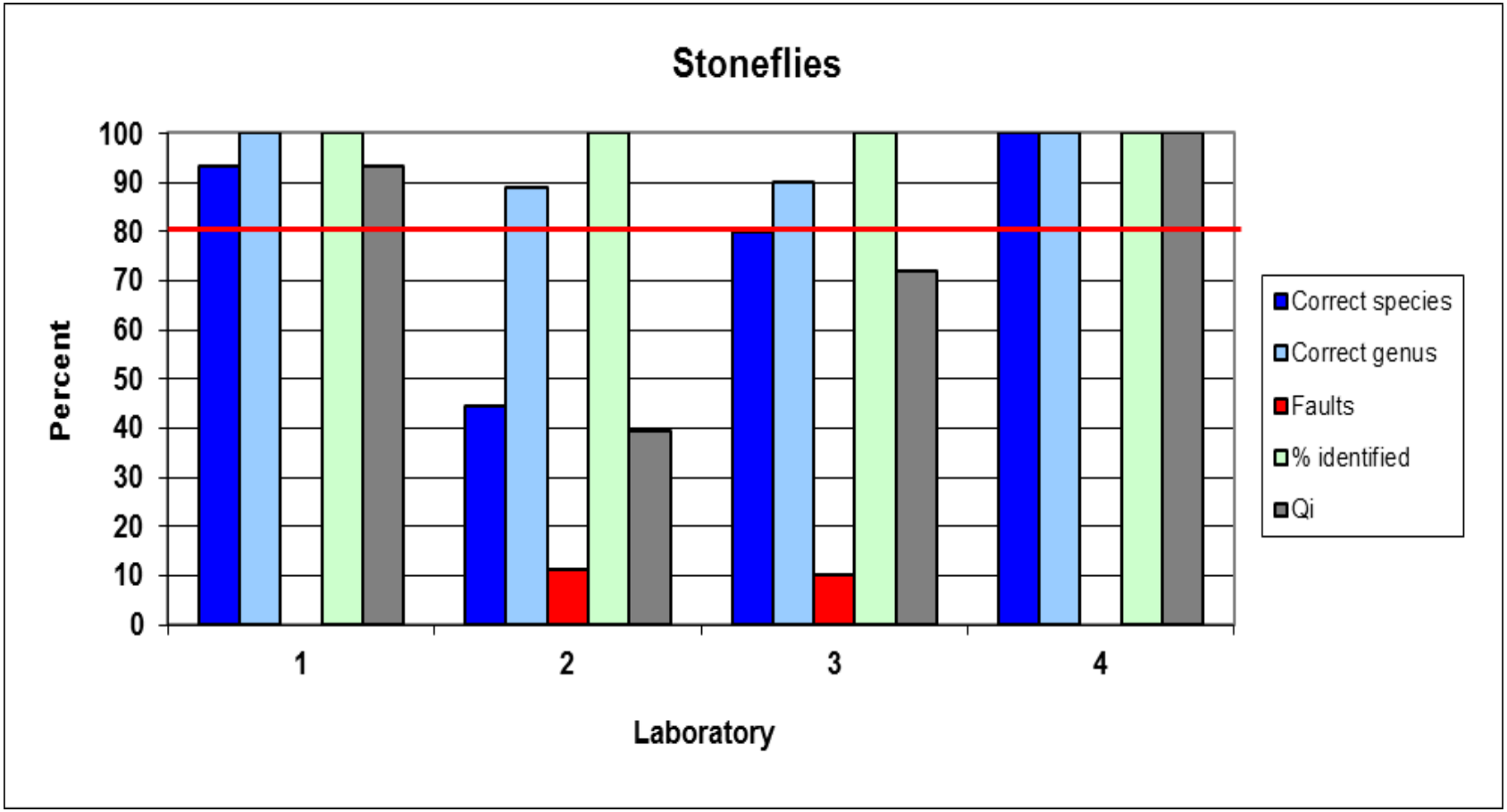
Mayflies


Mayflies
Percent
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
1
2
3
4
Laboratory
Correct species
Correct genus
Faults
% identified
Qi

Stoneflies



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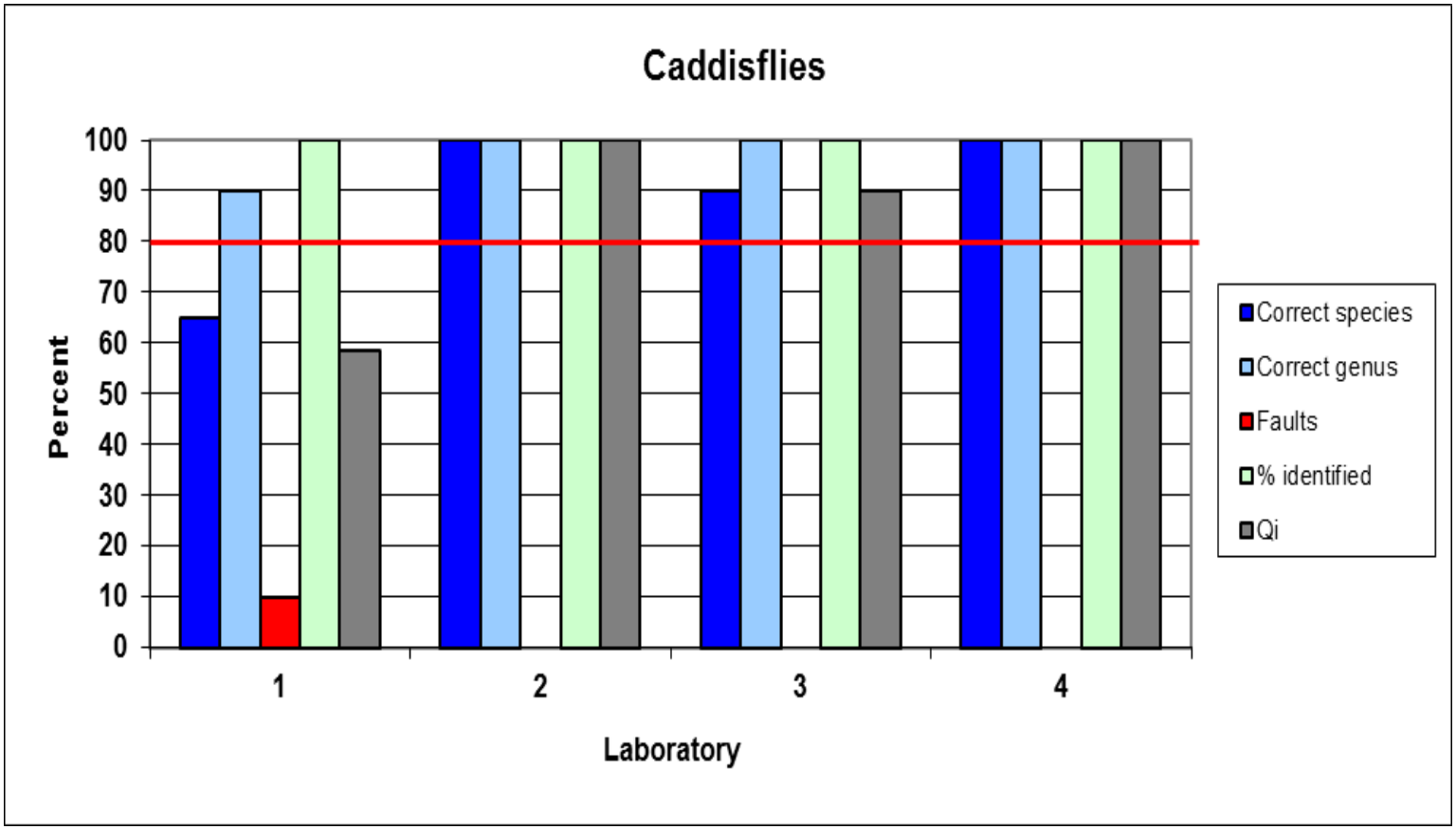
Caddisflies



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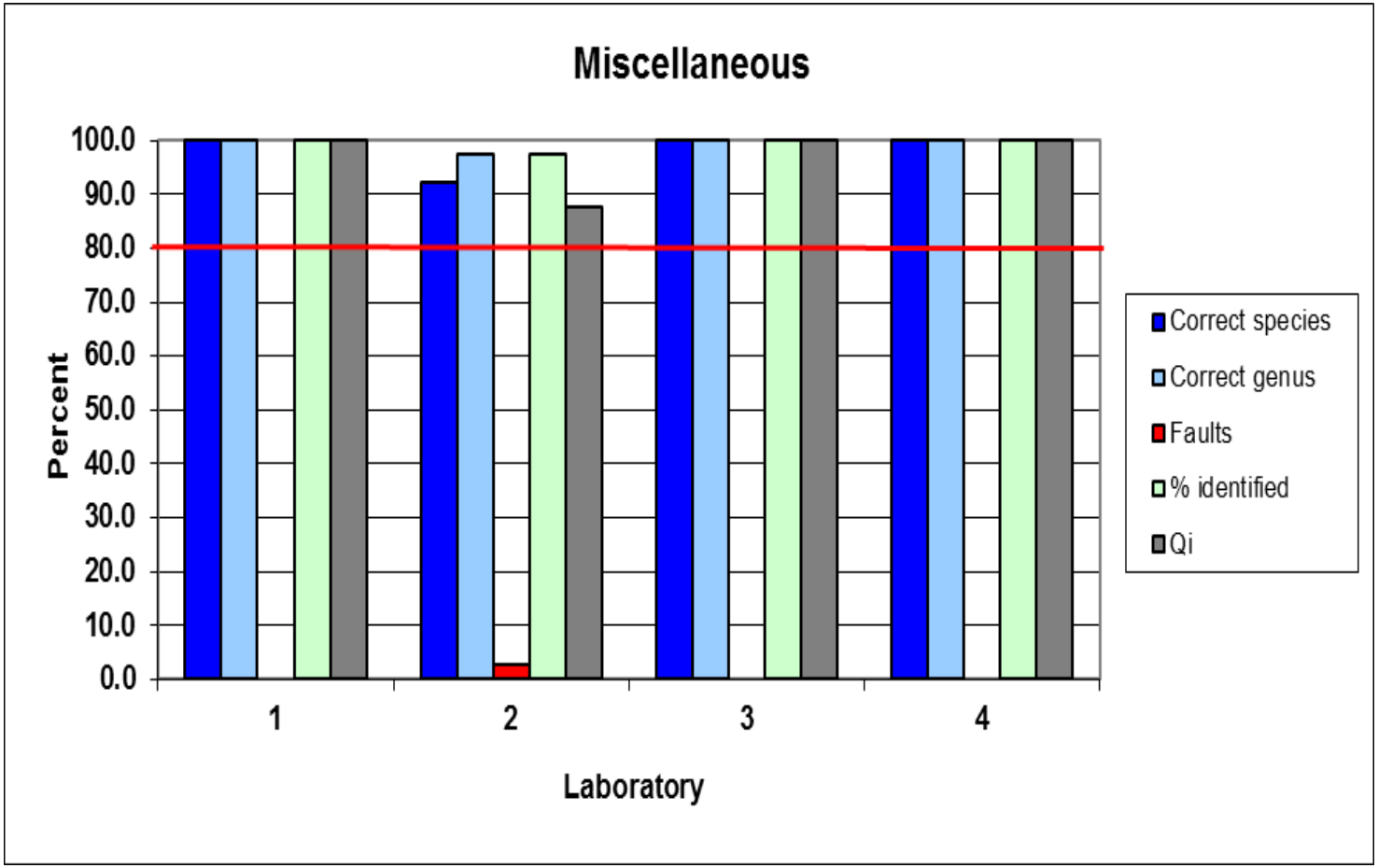
Other groups



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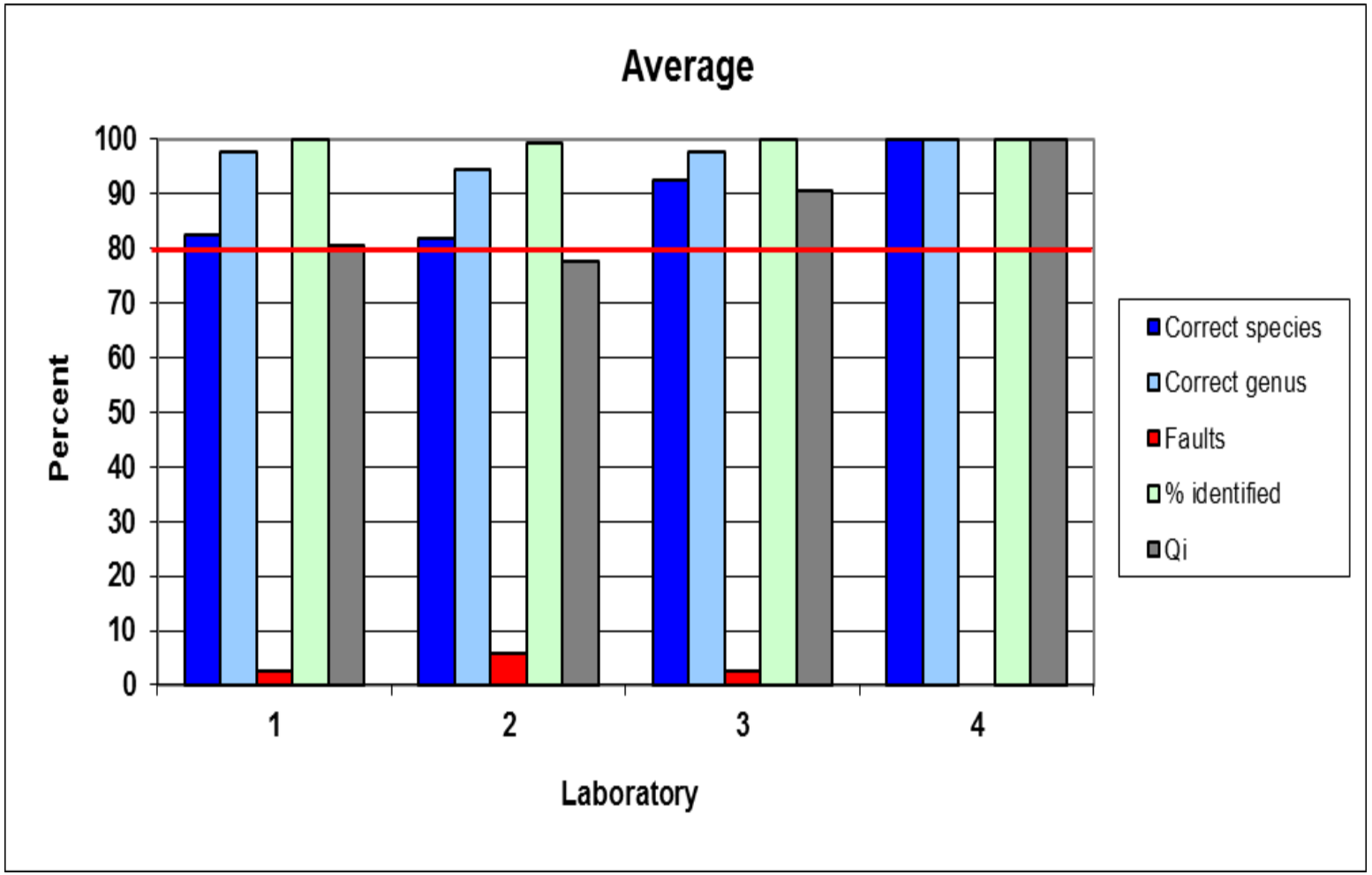
Average skill



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Conclusions

- Four laboratories participated in the biological intercalibration in 2017
- The average Quality index (Qi) was excellent for two laboratories. Laboratory 4 had all correct, and Laboratory 3 had a Qi of over 90, well above the limit for good taxonomic work

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Conclusions

- Laboratory 1 had an index value just over 80, indicating acceptable taxonomic work
- Laboratory 2 had an index value just below 80, indicating not acceptable taxonomic work
- This last result is caused by the stoneflies beeing correctly identified to genus only, and emphasizes the importance of trying to identify the EPT groups down to species level

Biological intercalibration 2017 Participants

- Sweden, Estonia, Germany, Switzerland

Planned participants 2018

- Norway, Sweden, Czech Republic, Ireland, Estonia and Latvia