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Dear Colleague

Please find attached the report of the 4th meeting of the EDNAP Group which was held at Bramshill, UK on 1 April 1990.

I apologise for the delay in preparing this report.

The material and instructions for the next EDNAP collaborative exercise will be sent to you from CRSE in the very near future.

Dr Mangin has agreed to host the next meeting in Strasbourg later in the year and I will inform you of the date and location as soon as arrangements have been completed.

The question of publication of the first collaborative exercise still remains unresolved, but you will all have received a letter from Dr Schneider and we must wait for the replies before a decision can be reached.

I look forward to our next meeting and I wish you much success with your DNA profiling.

Yours sincerely

P D Martin

P D Martin
on behalf of EDNAP

Enc.

They are studying ways to store the information from criminal cases and still require a frequency data base.

Parkin (MPFSL). 700 crime cases have been examined with the use of Hinf 1 and the probes MS1, MS31, MS43A and YNH24. They have achieved some success with saliva from envelopes and cigarettes.

Data index (criminal and frequency) are being prepared.

Morling (Copenhagen). Crime cases (stains) and paternities are being investigated. In stain work Hinf 1 digests are probed with MS1, MS43A and YNH24; paternities are examined using G3 and MS8.

They are also involved with immigration cases and are developing data bases.

It is expected that they will examine approximately 50 crime cases per year.

Kloosterman (Rijswijk). This laboratory has investigated 8 crime cases to date. They are preparing a data-base using a laser scanner and a Promega 'binning' method. For extraction they are investigating a method which uses Pro-K treatment and binding to silica-gel. DNA is removed with isocyanate. This is much faster than the usual method and does not use organic solvents but suffers about 50% losses.

Rand (Münster). Performing DNA profiling is stain work and in paternities (DNA only used for confirmation). Murders and rapes have been investigated and a collaborative investigation, involving 90 samples, was carried out with Bar (Zurich).

So far 24 cases have been examined.

Have experienced problems with the extraction of DNA from bloodstains.

They are preparing a YNH24 data base for Germany and attempting to make a human DNA 'ladder' from selected donors.

Gill (CRSE). Single locus probing now operative in case-work in Home Office laboratories using PMLJ41, MS31, MS43A, YNH24.

Multi-locus probing (33.15) is still used in case-work when high grade DNA is obtained and rapid answers are required.

They have developed the 'Biotrack' measuring system using 'sliding window' fits.

Research is continuing

1. To clone out new probes.
2. To investigate Bayesian analysis for likelihood relationships.
3. To study population stratifications.

Schneider (Mainz). This laboratory routinely carries out paternity investigations using MZ1.3 which was originally radio-labelled but now incorporates non-isotopic labelling. Only a few crime cases have been referred from the courts and little success was achieved due to the age of the material. PCR methods (using Cetus technology) have been tried

on one crime case, but it is impossible to know whether the result was correct or a product of contamination. They have taken part in collaborative exercises with other laboratories and using non-isotopic labelling have achieved results from less than 1μg of DNA.

A discussion followed on the necessity for the production of local data-bases for frequency calculations.

Brinkmann showed examples where allelic frequencies appeared to differ in German populations. The question of the need for statistics in a 4 slp match was raised and Gill said that it is necessary to demonstrate that there are no commonly occurring alleles in any of the systems which we are using. Pascali considered that a 'binning' system is essential if we are to capture important information.

Gill (CRSE) made a presentation (CRSE report in preparation) on the criteria used to obtain a band-match.

The participants were in agreement that a set of guidelines, rather than rules, was desirable at present. Gill offered to produce a spreadsheet, on the Bayesian approach, for members.

Schneider (Mainz) distributed copies of his analysis of the results of the first EDNAP trial.

He explained that Rome had been omitted because they used different size markers and Rijswijk because they only analysed 3 samples.

The participants then entered into a discussion on the desirability of publishing this analysis. Schneider wished to make the results known and considered that anonymity could be preserved and it would also be made clear that the participating laboratories were only in a start-up situation when the exercise was carried out. There was some agreement but Brinkmann was against publication as he considered that journalists do not know how to manage these data and as DNA is such a media-sensitive issue adverse publicity could follow. He further judged that anonymity could not be preserved as a lawyer, in court, could demand to know which results came from specific laboratories. No decision was reached but it was agreed that Schneider would present the results at the Edinburgh statistics meeting.

Kloosterman presented an example of the use of the Promega marker 'ladder' which showed very clear results but suffered the problem that it has a maximum 14 Kb marker and it would only be possible to accurately determine unknown samples below the 12 Kb size.

The problem of extra bands which are visualised with MS43A was the next topic of debate and it was generally agreed to be a problem. Jeffreys had recommended an increase in stringency but Gill thought that this would mean that protocols would vary from probe to probe. Parkin said that Cellmark had suggested using less probe and Schmitter confirmed that using 0.5 of the recommended amount eliminated the appearance of faint bands.

The subject of standardisation in collaborative exercises was the final topic to be discussed.

It was unanimously agreed that we should all participate in an exercise whereby all laboratories used a standard method. The following points were considered:-

1.	Ladder markers	-	'Cold' Amersham ladder to be used.
2.	Ground control	-	Kloosterman will supply this from his immortal cell-lines.
3.	Agarose	-	CRSE will provide
4.	Buffer	-	Details will be supplied by CRSE.
5.	Ethidium bromide	-	This will only be used in the λ Hind III track.
6.	Samples	-	CRSE will supply 3 pre-extracted DNA samples and the same samples already restricted.

The temperature of the electrophoresis should be monitored. Probes will be YNH24 and MS43A.

Final protocols and instructions will be sent to all participating laboratories.

Schneider and Gill will analyse the results and a sub-group will meet to discuss the analysis. The results will be circulated before the next meeting.

Mangin and Ludes offered to host the next meeting in Strasbourg at a date to be determined.