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**NATIONAL COUNCIL OF SHECHITA BOARDS**
OF GREAT BRITAIN

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Established 1953

M. T. Kester – Executive Director

# CONFERENCE

## MACDONALD BOWER HOTEL

## CHADDERTON LANCASHIRE

## FARM ANIMAL WELFARE COUNCIL

## "SLAUGHTER WORKING GROUP"

**Held on**

**MONDAY 27 MAY 2002**

**A Joint Project of :**

**The National Council of Shechita Boards**

**and**

**The Board of Deputies of British Jews**

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| **CHAIRMAN:** | **N C Oster** | **President - NCSB** |
| **SPEAKERS:** | **Dayan Ch.Ehrentreu** | **Av Beth Din – London** |
| | **Rabbi B Fagil** | **Shochet** |
| | **I McLeish** | **OVS Veterinarian** |
| | **S Rosen** | **Consultant Cardiologist** |

## CURRICULUM VITAE – GUEST SPEAKERS

**Dayan Chanoch Ehrentreu**

Date of Birth: 27 December 1932:

Educated at Amersham Grammar School, Gateshead Jewish Boarding School, Gateshead & Sunderland Talmudical Colleges and Institute of Higher Rabbinic Studies, Gateshead.

Principal of Academy of Advanced Rabbinics, Sunderland 1960-1979.

Senior Judge (Dayan) Manchester Beth Din (Rabbinical Court) 1979-1984.
Senior Judge (Dayan) London Beth Din (Rabbinical Court of the Chief Rabbi) 1984

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**Rabbi Yisroel Dov (Bernie) Fagil**

Date of Birth: 9 April 1939

Educated at Liverpool Grammar School for Boys, Gateshead and other Talmudical Colleges.

Trained as a Shochet in Liverpool. First position Cardiff as Shochet and Teacher. Second position - Liverpool as Shochet and Teacher at the King David Grammar School. 1970 joined the London Board for Shechita. Also Head Teacher at Stanmore Synagogue Hebrew Classes – the largest in the UK.

Rabbi Fagil lectures in Talmudics. The National Council is often asked to send a representative to talk to the students and adults on the subject of Shechita, and Rabbi Fagil frequently carries out this duty.

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**Mr Ian McLeish - Veterinarian**

Ian McLeish qualified as a veterinary surgeon in 1969 and is currently a contract holder with the Meat Hygiene Service, supervising three kosher abattoirs and two kosher cutting rooms.

He has previously worked in the USA, Cyprus, Belize, Somalia and the Saltanate of Oman.

Ian holds a diploma in Veterinary Anaesthesia and is a Member of the Royal College of Anaesthetists.

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**Dr Stuart D Rosen MA MD FRCP**

1971/78 Hymers College, Hull (Governors' Scholarship). 1979/1982 Pembroke College, Cambridge (Medical Sciences Tripos). 1982/1985 Charing Cross & Westminster Medical School University of London. 1982 BA Cambridge University. 1985 MBBS London University. 1986 MA Cambridge University. 1990 MRCP Royal Colleges of Physicians. 1996 MD London University. 1997 Fellowship of European Society of Cardiology. 1997 Fellowship of American College of Cardiology. 2001 Fellowship of Royal College of Physicians.

( A full CV appears after Dr Rosen's lecture.)

# FAWC SEMINAR – MAY 27 2002

**Chairman – N C Oster**

It gives me much pleasure to welcome delegates from the Farm Animal Welfare Council Slaughter Working Group. As soon as we learnt that FAWC had a Sub-Committee interested in observing Shechita, we felt that in order for the committee to better appreciate what Shechita means to us, we should arrange a seminar along side the demonstration. Unfortunately, due to the outbreak of Foot & Mouth Disease, the first seminar and demonstration was cancelled, but we are delighted to welcome you all here today.

Shechita is one of the foundation stones of the Jewish Community and has been practised for over 3,000 years. Its religious significance should not be underestimated and we are privileged and honoured to have with us on of England's leading rabbis, the Senior Judge of the Rabbinical Court of the Chief Rabbi – Dayan Ehrentreu.

**Dayan Ehrentreu.**

**Shechita** is the Jewish humane method of slaughtering permitted animals for food.

**Permitted Animals:** The Torah – known in the secular world as the five books of Moses - lays down for Jews that only ruminants with cloven hooves, see Lev: 11:3. Deut:14:6 – are permitted for food consumption, *kosher*. Besides conforming to these rules, the animals must be slaughtered in the prescribed manner, (*Shechita*), and the carcass then submitted to a post-Shechita examination, to ascertain the animal is free from injury, disease or defects which could render the animal unfit for Jewish consumption – *treifah*. This is mentioned in Exodus 22:30. Animals that have major organs damaged, missing, perforated, torn or broken, may not be slaughtered for food.

**Humanness to animals:** The Torah permits us to use animals and fowl, but we may not cause them unnecessary suffering or pain. The Torah also gives Laws to teach us to treat animals in a considerate and humane way:-

| | |
|---|---|
| Exodus 20:10 | Your animals must also rest on the Sabbath. |
| Lev. 22:28 | A mother animal must not be slaughtered on the same day as her young. |
| Deut. 22:6 | If a bird's nest happens to be before you on the way, on a tree or on the ground, (containing) young birds or eggs, and the mother is sitting on the young birds or on the eggs, you shall not take the mother from the young. |
| Deut. 22:7 | You shall first send away the mother before you take the young (or the eggs). |
| Deut. 22:10 | One may not harness a plough with two animals of different species – say an ox with a donkey. These two animals pull with a different gait and strength and although such a combination may be of benefit to man, it is considered cruel to the animals. A further possible explanation is given. An ox being a ruminant may give off food vapours from its mouth as it ploughs, which could cause distress to the donkey which does not ruminate, as the donkey may fret that it has no food to munch whilst working. |

Deut. 25:4 It is forbidden to muzzle an ox during threshing.

Jews are commanded to ensure that their domesticated animals are fed before they themselves sit down to a meal. Hunting and blood sports are forbidden to Jews and there are many other examples in the Torah and later literature.

**Shechita – A Divine Command:** In Deut.12:21 it says "……you may slaughter from your cattle and from your flock that G-d has given you, as I have commanded you,……." The words " as I have commanded you ", indicate the existence of a command and knowledge of a method of slaughtering animals, which must have been transmitted orally. Jewish tradition teaches that at the time Moses received the written Law, he also received an oral Law which is equally binding on the Jewish nation. The oral laws were handed down from teacher to pupil until committed to writing in an abbreviated form in the Mishnah - compiled in the year 180 CE, which means the Common Era. As more time passed and the Jewish Nation became more scattered, the Rabbis felt it necessary to commit to writing the lessons, discussions and traditions contained and deriving from the Mishnah. Thus, the Talmud was written in the year 499 CE. Shechita is specifically discussed in detail in Trachtate Chulin chapters 1 and 2.

The Talmudic Laws were later codified by Maimonides in the year 1200 CE, and further clarified in Mishnah Torah - Laws of Shechita - by Rabbi Joseph Karo, in the year 1575 CE. - in the Shulchan Aruch -Yore De'a 1-28.

**The Shochet:** Shechita may only be carried out by a qualified Shochet. He must have a detailed knowledge of Jewish Law, be dextrous and possess a genuine personal piety and integrity. It takes many years of study to accumulate the necessary knowledge of the Torah, Talmud and the Laws associated with Shechita, before a man is permitted to embark on the practical side of Shechita.

Prior to working unsupervised a Shochet must receive approbation from a Rabbinical Authority, testifying that he is not only learned in the Laws of Shechita, but also that he is trustworthy, possessing the skill and expertise to perform the act of Shechita. As the Shochet carries out a most crucial function basic to the Jewish Community, he must maintain a personal standard of piety and skill, worthy of his responsibilities and the trust that the community places in him. He is employed by a Shechita Board and answerable to its Rabbinical Authority. In this way, a Shochet is under no obligation to the abattoir, in which he works and under no pressure to perform in a way that may compromise his religious standards.

**The Chalaf:** Shechita is performed with a special knife, of a particular shape and sharpness, known in Hebrew as a *"Chalaf"*. This translates as "to change" or "to transform", for the Chalaf "transforms or changes" - through the act of Shechita - the state of the animal from being prohibited for food whilst alive, to being permitted for food after the act of Shechita has been correctly performed.

The Chalaf is prepared in a prescribed manner and is as sharp as a surgeon's scalpel. The cutting edge must be free of the slightest notch, flaw or imperfection. It is minutely examined, both immediately before and after each animal is slaughtered. The prescribed method of examining the Chalaf is by the Shochet running his fingernail up and down the blade. This method will detect even the slightest imperfection.

**The Shechita cut** is a swift movement of the knife. It causes no pain and takes a fraction of a second. In one uninterrupted movement it severs through the neck, cutting the trachea and oesophagus, the jugular veins and carotid arteries. These are the main vessels supplying and draining blood from the head and brain. The Shechita cut stuns, despatches and exsanguinates in one operation. This rapid bleed-out is religiously important, as Jews are not permitted to eat blood.

According to Jewish Law, meat can only be eaten after all the blood has been extracted. To this end, after the slaughter process, the butcher carries out two further religious procedures - *"porging"* and *"koshering"*. Porging removes certain forbidden veins and fats and koshering involves soaking, salting and a further three-fold washing off procedure.

**The Shochet's Cardinal Rules:** The Shochet must observe the following five rules when he carries out the act of Shechita:-

1 *Shehiya* – there must be no pause. The incision must be continuous until all the vital vessels are severed.

2 *Derasa* – there must be no pressing upward or downward or any hacking.

3 *Chalada* – there must be no burrowing. The Chalaf must not be introduced under the skin, as in stabbing, or be covered by the wool of the sheep or hair of the steer. The incision must be free and open so that the blood drains away unimpeded.

4 *Hagrama* – the cut must be made in a prescribed region of the neck, namely through the trachea, preferably below the cricoid – the complete cartilaginous ring immediately below the larynx – but not through the larynx, nor through that part of the neck which is close to the chest.

5 *Ikkur* – there may be no laceration but rather an incision, a clean cut not a tear. (For this reason the knife is examined both before and after each Shechita cut to ensure that the blade is perfectly smooth.)

**The examination of the lungs:** Having mentioned earlier that the animal must be healthy, the Shochet must ensure that the lungs are complete and not perforated. Rabbi Fagil will explain to you how the examination is done and what he is looking for when he carries out the examination. It goes without saying that if the Shochet sees the animal he is about to shecht is in any way damaged externally, he would refuse to carry out Shechita on that animal.

**Shechita is a painless procedure:** We have a tradition, brought down in the 13th century in a book known as "Safer H'chinuch", that the location of the Shechita cut, together with the five cardinal rules listed above were divinely ordained - in order that the animal should not suffer pain.

**The restraining pen:** Today, in all UK abattoirs, cattle are shechted in the upright position in a specially designed restraining pen. The pen consists of a belly plate, which lifts the animal slightly off the ground, a tail-push, a chin-lift and pole-stop, all of which help to fully immobilise the animal. The chin lift extends the neck, which must be washed down prior to Shechita, to ensure that the Chalaf will not be damaged by foreign matter, such as dirt or mud which may be adhering to the area of the Shechita cut.

**Dayan Ehrentreu (cont'd)**

**Pre-Shechita cut stun:** As mentioned, an animal suffering from injury, disease or a serious defect in one of its organs, be they perforated, torn, broken or missing, renders the animal unfit for consumption according to Jewish Law. Perforated lungs, a perforated oesophagus, a broken leg or rib, are some of the many examples of a treifah animal. Stunning an animal causes internal injuries and renders the animal treifah - unfit for Jewish consumption.

**Post-Shechita cut stun:** In order to assist certain Northern abattoirs to increase their daily throughput, a Rabbinical Authority reluctantly permitted a post-cut stun, with the proviso that a significant period of not less than 30 seconds must elapsed after the Shechita cut was completed. The majority of abattoirs in this country do not carry out a post-Shechita cut stun and the Jewish Community wants that status quo to remain.

**Physiological aspects of Shechita:** Dr Stuart Rosen will be giving a talk on the physiological aspects of Shechita. I have clearly illustrated the Biblical and Jewish attitude to animal welfare. We are firmly of the opinion that Shechita is a humane method of slaughter, from every point of view. That the Chalaf swiftly severs the carotid arteries and jugular veins clearly affects the main blood supply to and from the brain, immediately producing a sudden and substantial fall in blood pressure. This leads to rapid unconsciousness, ensuring the animal is incapable of feeling pain.

**To sum up:**

**Shechita is a Divine Commandment**, which the Jewish nation has been practising for over 3,000 years.

**Intensive training** is given to each Shochet to ensure a consistent standard is maintained both in the preparation of his Chalaf and in the act of Shechita. This ensures that every Shechita cut is swift, uninterrupted and painless.

**The Pen** ensures that the animal is fully immobilised.

**That Shechita is Humane** is accepted in Canada and the United States of America, where legislation prescribes that slaughter be humane and Shechita is expressly specified as a humane form of slaughter under their Humane Slaughter Regulations 1959 and the Federal Human Slaughter Act of 1958. The Canadian and American positions were further confirmed in Law in 1974. This contrasts with the provision in the UK domestic legislation, which permits Shechita only by exemption.

**In conclusion:** We trust this talk will give the delegates from FAWC a better appreciation of the deep and sincere thought and concern that is observed by Jews, in their relationship with animals, and an acceptance that Shechita is a humane method of slaughter.

Thank you for coming here today.

**N C Oster:** We have just been privileged to learn today, from a senior Rabbi of the London Beth Din, some of the many facets of Jewish life, contained in the word Shechita.

On behalf of us all may I thank Dayan Ehrentreu for giving up his day for us.

N. Oster: Our next speaker is one of the most experienced Shochtim in the U.K.. A man highly respected in our community not only for his skill and dedication as a Shochet, but also as a lecturer in Talmudic study and a much sort after speaker on the subject of Shechita to students in agricultural colleges and Jewish Sunday Schools – Rabbi Fagil

**Rabbi B Fagil**

Unlike most Jewish Religious Slaughtermen – called *Shochet* or in the plural *Shochtim* - neither my father nor grandfathers served the Community as Shochtim.

My only exposure to Shechita was as a young boy of four, growing up in Liverpool, some sixty years ago, when my mother took me to the local butcher's shop, to purchase a live bird. We then walked to a yard behind the establishment, with the bird, where there were many other people queuing up with their birds for the Shochet. I still remember how unpleasant the atmosphere was. The yard was smelly, full of feathers and the electric plucking machine made normal conversation impossible.

However, it was the Shochet who left an indelible impression on my mind. He was a small man with a goatee beard and black skullcap. He gently took hold of each bird and with two fingers of his left hand prepared the neck and then swiftly carried out the Shechita cut. My lasting impression is of a man carrying out a religious and holy task, in the service of his Creator.

After leaving secondary school, I studied in a Talmudic College, known as a Yeshiva. The average study day would be 15 or 16 hours, 6 days a week, with a slightly shorter study period on Saturday. Saturday, being our day of rest, would be spent in longer periods of prayer. Like many other students my studying was for its own sake, in order to better understand the Holy Books handed down over the generations - described by Dayan Ehrentreu. Very often Yeshiva students learn for many years, even after marriage, without making a decision as to what profession they should follow.

In my case, with the encouragement of my rabbinical teachers, I decided to become a Shochet and thus combine religious studies with a practical religious profession.

Every student who decides to take this path needs to be approved, not only by the Dean of his College but also by the local Religious Court – *Beth Din*. Having been accepted as a suitable candidate, the student will continue his studies, often for a further two years, during which he will become familiar with the detailed instruction of Shechita. The books of study will be in Hebrew and Aramaic. Once the tutors are satisfied the student has mastered the theoretical subject of Shechita he will serve a form of apprenticeship to a senior Shochet who will supervise his training.

The first lessons are devoted to the preparation of the special knife – the *Chalaf*. Dayan Ehrentreu explained the five cardinal rules of a Shochet and the Chalaf, by virtue of its special shape, mitigates against using a stabbing motion when carrying out Shechita.

The Chalaf comes in the form of a blank blade and each Shochet will hone the blade according to his personal preference and training. This skill can take six months to perfect, working every day on a Chalaf.

Very often, having presented your knife to your tutor, he will deliberately damage the blade and give it back to you to repair. It is extremely important for a Shochet to be able to repair a knife quickly, as this is a skill he will need when working in a busy abattoir.

**B Fagil (cont'd)**

As Dayan Ehrentreu remarked, Shochtim are salaried employees, under no obligation to the abattoirs in which they work. There must be no pressure on the Shochet to work faster, as each act of Shechita is a Divine one, and there must be no pressure on the Shochet to compromise his religious standards in any way.

**To conclude:** If our Creator in His wisdom decreed that we should slaughter animals by Shechita, then surely He who created the animals must know which is the most humane method of slaughter. Having worked for over 40 years in abattoirs around the country, I am in no doubt that Shechita is a most humane way of slaughtering animals. Thank you.

**N C Oster:** Ladies and Gentlemen I have heard Rabbi Fagil speak in the past and I am always impressed by his sincerity and dedication to his profession. It is, indeed, a privilege for us to have the services of such a man, and on your behalf I thank him for giving up his day to attend this Seminar.

**N C Oster:** Our third speaker is the veterinarian responsible for two of the abattoirs in which Shechita takes place. Mr Ian McLeish has witnessed and supervised the slaughtering of animals in many different parts of the world and we appreciate his agreeing to address you today.

**Ian McLeish – Official Veterinary Supervisor**

Michael Kester – this Event's Organiser - informed me of this Seminar and as I am currently responsible both for poultry and cattle abattoirs at which Shechita takes place, he wondered if I would be prepared to address you. I felt it important that you should be aware of the duties of the Official Veterinary Supervisor – OVS - working in abattoirs, and I am delighted to be here today.

All regulations appertaining to abattoirs are the responsibility of an OVS who is contracted to the Meat Hygiene Service.

We are responsible for the enforcement of all the laws relating to hygiene, training, organising and running a team of Meat Inspectors and, of course, the welfare of the animals at the time of arrival right up to and including the point of slaughter. The welfare of animals at the abattoir is something we take extremely seriously and of the prosecutions that I have brought two thirds have been in connection with animal welfare.

> (**Slide 1**) "Welfare of Animals [slaughter or killing] Regulations 1995. No person shall engage in the movement, lairaging, restraint, stunning, slaughter or killing of any animal unless he has the knowledge and skill necessary to perform those tasks, humanely and efficiently.
>
> An authorised Veterinary Surgeon is responsible for overseeing the training and licensing of all slaughtermen, whether the slaughter be by a non religious or religious method."

The difference between "slaughter" or "killing" is that "slaughtered" means that the animal dies by bleeding. "Killing" means that the animal is despatched, usually by shooting.

All slaughtermen working in abattoirs come under the ultimate responsibility of the OVS who must ensure that all members of staff are fully trained, whether they are responsible for religious or non religious slaughter.

> (**Slide 2**) "Operations which require a Licence:-
>
> a) The restraint of any animal for the purpose of stunning, slaughtering or killing that animal.
> b) The stunning of any animal.
> c) The slaughter of any animal.
> d) The killing of any animal.
> e) The assessment of effective stunning or killing of any animal by any person whose duty it is to make such an assessment.
> f) The shackling or hoisting of any stunned animal, and
> g) The bleeding of any animal which is not dead."

The purpose of these regulations is to ensure that the animal is handled in a correct manner until it is dead. That is why personnel involved in moving a stunned animal must be licensed. .

Although each abattoir is responsible for training its staff, it is the OVS who must supervise this training. Every person working with live animals must be licensed and during training the OVS will issue a provisional Licence.

> **(Slide 3)** "Provisional Licence. Issued by the authorised Veterinary Surgeon to a trainee slaughterman.
>
> Provisional Licence holders have to
>
> 1) Be a fit and proper person.
> 2) Be 18 years or older, and
> 3) Satisfy the authorised Veterinary Surgeon of any previous Licence suspension/revocation or conviction under welfare legislation.
>
> The Provisional Licence is renewed every three months under normal circumstances until a Certificate of Competence is issued, meaning:
>
> 1) A Certificate is issued by an authorised Veterinary Surgeon, or
> 2) A Licence granted to the applicant for the purpose of slaughtering animals by the Jewish method by the Rabbinical Commission in England and Wales or by the Chief Rabbi in Scotland."

The responsibility to investigate an applicant lies with the OVS. I only have the authority to ask him if he has had any animal welfare convictions. In regard to his suitability to work in an abattoir, it is left to me to judge if he is a "fit and proper person." My sole criteria is the issue of animal welfare, and on one occasion I interviewed and accepted a convicted rapist, who had been issued with a Welfare Licence prior to his offence and now wished to return to his previous employment. Should I discover that an applicant was an alcoholic or had been convicted of an offence because of a drinking problem, then I could reasonably refuse his application. As you can see from the slide, an applicant must be 18 years of age. Up to ten years ago it was illegal for women to work on a slaughter line and I understand women are now working on the slaughter line in Scotland.

Jewish Religious Slaughterman are granted a three-month renewable Provisional Licence by the OVS until such time as the Shechita Authority supervising his training applies to the Rabbinical Commission for the Licensing of Shochetim to grant him a Certificate of Competence. After the OVS has seen the Rabbinical Commission's Licence, he will issue a lifetime Certificate of Competence.

The training of general slaughtermen, is on the job and is carried out by the Plant Operator. The OVS will only take direct responsibility of a slaugherman's training if he feels problems are developing and corrections need to be made. The OVS undertakes a "testing programme" and carries out a "continual assessment of slaughtermen". This assessment has to be recorded and monitored all the time until the OVS is satisfied that the slaughterman is worthy of a Certificate of Competence. Until that Certificate is issued, the trainee slaughterman must work within the sight and bearing of a Licence or Certificate holder.

The trainee slaughterman's Supervisor must be satisfied that the trainee is familiar with the legislation and serious enough about his work to act in a professional manner at all times and not take any short cuts. However, in the case of religious slaughtermen, there are additional regulations that must be adhered to.

(Slide 4) **"Additional Provisions for Slaughter by a Religious Method**

In this Schedule, references to slaughter by a religious method are references to slaughter without the infliction of unnecessary suffering,

a) by the Jewish method for the food of Jews by a Jew who holds a Licence in accordance with Schedule 1 (which relates to the licensing of slaughtermen) and who is duly licensed

(i) In England and Wales by the Rabbinical Commission referred to in Part IV of this Schedule
(ii) In Scotland by the Chief Rabbi.

b) by the Muslim method for the food of Muslims by a Muslim who holds a Licence in accordance with Schedule 1 (licensing of slaughtermen)."

Muslim slaughtermen are only licensed by the OVS and do not hold a Religious Islamic organisation supervising their training. Muslim slaughtermen will often work at many different abattoirs, and on a personal level I am concerned that their level of training is not of a standard that I would like. Many Muslim slaughtermen accept a pre-cut stun on sheep so as far as their Community is concerned there is little difference between Halal and conventional slaughter.

Shochetim undergo a strict and supervised period of training. Their supervisors are dedicated men, who ensure that no trainee will embark on the slaughtering of animals until he has the competence and necessary skill. The OVS will initially grant the trainee Shochet a renewable three-month Licence, and as Bernie mentioned earlier, once the OVS has sight of the Rabbinical Commission's Licence, he will grant the trainee a Certificate for life.
To sum up the differences between the training of a Muslim and Jewish slaughterman, I have prepared the following slide:-

(Slide 5) **"Comparative aspects of training of slaughtermen**

a) **Non religious and Muslim slaughter:-**

Training carried out usually by the Plant Operator in conjunction with the Official Veterinary Supervisor.

Minimum religious input and (except in strict Halal slaughter) pre-cut stunning.

Training period is usually shorter owing to less skilful requirements for slaughtermen.

Continual assessment of slaughtermen is left up to the Plant Operator and the authorised Veterinary Surgeon, usually the latter.

(Slide 5) "Comparative aspects of training of slaughtermen

b) Jewish slaughter:-

Training carried out by a Shechita Board which will be affiliated to the National Council of Shechita Boards.

Very strong, dominant religious input.

Training period is of the order of 2 years in most cases with strict control by the supervising Jewish slaughterman.

Continual assessment of Jewish slaughtermen by the Shechita Board that employs him and the OVS."

The slaughter of bovine animals by a religious method is prescribed in the Regulations. The Regulations also stipulate that for religious slaughter the animal must be in an upright position. The standard restraining pen or box has no restraining mechanism, although abattoirs are being encouraged to install a head restraint. This should minimise the number of miss-stunned animals.

(Slide 6) "Slaughter of bovine animals by a religious method

If the animal is unstunned :

No person shall slaughter, or cause or permit to be slaughtered, any bovine animal in a slaughterhouse by a religious method unless the animal is in an upright position in a restraining pen, which has been approved by the Minister, and which the Minister is satisfied has been installed in such a manner as to ensure that it will operate efficiently.

The Minister may give his approval to a restraining pen, but he shall not give any such approval unless he is satisfied that the pen is of such a size and design, and is able to be so operated, as to protect a bovine animal from any avoidable pain, suffering, agitation, injuries or contusions, while confined in it or while entering it and, in particular, unless he is satisfied that the pen :

Contains an effective means of restraining any bovine animal contained in it (including a suitable head restraint for that purpose) and

Contains means of support that will take the weight of the animal during and following slaughter in it."

The belly lift/support is important as without it the animal will collapse after the Shechita cut, and the carcass will not exsanguinate properly.

(Slide 7) "Method of slaughter

Any person who slaughters by a religious method any animal, which has not been stunned before bleeding, shall:

a) Before each animal is slaughtered, inspect the knife to be used and ensure that it is not used unless it is undamaged and of sufficient size and sharpness to be capable of being used to slaughter the animal in the manner described below:

b) Ensure that each animal is slaughtered by the severance, by rapid, uninterrupted movements of a knife, of both its carotid arteries and both its jugular veins."

A Shochet will examine his knife both before and after he has slaughtered each animal and he will work closely with the restraining pen operator to ensure the animal is restrained in the pen for the shortest period of time, before he carries out the Shechita cut.

The pen operator will have a stun gun to hand should the Shochet feel the cut has not been carried out correctly. This rarely happens.

Both in the case of cattle and sheep, the Shochet's responsibility ceases once the cut is satisfactorily completed, and it is for the abattoir personnel to decide when the slaughtered beast should be moved and the next one brought forward for slaughter. No animal should be hoisted until the set period of time has elapsed – 20 seconds for a sheep and 30 seconds for a bovine. In the case of the bovine it takes about 30 seconds for the beast to bleed-out.

The severance of the blood vessels is most important and with Jewish Religious slaughter, I have never had reason for concern. The Shochet's knife is a very carefully prepared instrument, as described by Rabbi Fagil.

Whilst I am aware that this Committee is presently investigating red meat animals. I would like to take advantage of this Seminar to describe Shechita of poultry. The common species are – chicken, turkey and duck. Each bird is individually lifted from the crate and immediately placed before the Shochet. Each bird is slaughtered by a rapid and uninterrupted movement of the Shochet's knife severing its jugular veins, oesophagus, trachea and carotid arteries.

With secular slaughter, birds are hung on shackles and passed through a stun tank, which should render each bird unconscious. The bird then passes a revolving blade that, provided the bird is in the right position, will sever the neck.

Unfortunately, due to the speed of the line, many birds miss the stun tank and the cutting blade and enter the plucking machines alive. An abattoir operator is supposed to stand in front of the plucking machine and slaughter these birds but too often, due to the speed of the line he misses them.

With the kosher method of slaughter, immediately after the Shochet has completed his cut, the bird is placed in a cone to bleed out and it will not be lifted from that cone until the regulatory period of 90 seconds has passed. As far as the legislation is concerned, there are no other stipulations with regard to religiously slaughtered poultry.

As with cattle, the Religious slaughtermen go through an extensive period of training under the supervision of a competent Shochet and when qualified will receive a Certificate of Competence from the Rabbinical Commission for the Licensing of Shochetim, which is renewed annually. The abattoir OVS will then issue him with a lifetime Licence.

In closing this lecture, I would like to return to the subject of slaughtering animals by cutting their throats. In European countries the standard method of slaughter is to first stun the animal by whatever means are considered appropriate, before sticking takes place. However, you should be aware that throat cutting is carried out in many Christian countries. When I was in Central America, working near Guatemala, I was appalled at the way the Christian abattoirs slaughtered their animals and so, too, in Africa and on the Sub-Continent of India and Pakistan.

As a Veterinary Surgeon, who has worked in abattoirs for many years, I appreciate it is difficult to assess methods of slaughter which are different from what we are used to seeing. I am not here to discuss my preferences of slaughter techniques. Each person must make up their own mind but I believe slaughter by the correct use of a captive bolt is acceptable, although I have seen mistakes happening too often. My job as the OVS is to ensure that these mistakes are kept to a minimum.

With regard to Shechita, clearly the dominant religious input is extremely beneficial and I am personally satisfied that Shechita is an humane method of slaughter. Thank you.

**N C Oster:** In thanking Mr McLeish, may I say how much we appreciate your coming here today and addressing this Seminar and also the professional, yet close, relationship you have developed with the Shochetim at the abattoirs you supervise.

Our final speaker is Dr Stuart Rosen.

Stuart has been involved in the field of Shechita for many years and worked closely with the late Rabbi S D Sassoon who wrote important books on brain wave patterns and with Rabbi Dr I M Levinger – author of the book *"Shechita in the light of the year 2000"*.

(Continued on following pages)

# Physiological Insights into Shechita

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The purpose of this paper is to review the Jewish religious method of animal slaughter, *Shechita*, from a physiological point of view. Much of the data presented on scientific aspects of *Shechita* have been known for decades, although a number of new perspectives are included. To illustrate the principles and make the process more comprehensible, a number of analogous human clinical scenarios will be considered in addition.

## A Introduction

As a preamble, it should be stated that the reason for the Jewish observance of the commandment of *Shechita* is quite simply that it is a basic commandment, conveyed via the Oral Law and dating back to the time of Moses. *Shechita* is a fundamental Jewish religious practice and constitutes the only method of animal slaughter permissible according to the traditional body of Jewish law, the *Halacha*. This is, in fact, part of a broad range of legislation in the *Halacha* that promotes kindness to animals. Examples of this include: the injunction that animals are to rest on the Sabbath (Exodus XXIII 12); the interdiction against ploughing with an ox and an ass together [their natural powers being unequal (Deuteronomy XXII 10)]; the injunction to send away a mother bird before removing eggs from a nest (Ibid XXII 6); the prohibition against muzzling an ox at the threshing floor (Ibid XXV 4); animals to be with their mother for (at least) the first 7 days of their lives (Leviticus XXII 27); no slaughter of a mother-animal and its offspring on the same day (Ibid XXII 28); the need to reload an overloaded animal (Exodus XXIII 5 & Deuteronomy XII 4) and the obligation to feed one's animals before feeding oneself (Ibid XI 15)]. It is important to note that Jewish people regard themselves as religiously culpable if animals suffer. Thus consistent with the *Halachic* legislation on animal welfare, *Shechita* is embraced as a most painless and rapid method of slaughter.

Because it is the only religiously permissible method of animal slaughter for Jews, moves to undermine the Jewish people's ability to perform *Shechita* have implications with regard to rights to religious expression. Historically, attacks on *Shechita* have rarely been based on prima facia scientific objections to its effects. For example, *Shechita* was banned in Germany in 1933, despite having been widely endorsed throughout the scientific community in 1932.

## B The act of *Shechita*

*Shechita* is the act of slaughtering an animal by a perfectly clean cut through the structures at the front of the neck - the trachea, oesophagus, carotid arteries and jugular veins - see Figure 1. There are a number of key *Halachic* considerations in this act: *Shehiya* - there should be no interruption of the cut; *Derasa* - there should be no pressing of the blade against the neck; *Halada* - the blade should not be covered by the hide of cattle, wool of sheep or feathers of birds (and therefore the blade has to be of adequate length); *Hagrama* - the cut has to be at the appropriate site on the neck, in effect that which permits the severance of the neck structures as quickly and as neatly as possible; and *Ikkur* - there must be no tearing loose of tissues. To achieve these, the *Chalaf* (*Shechita* knife – Figure 2) is honed to an exquisite sharpness, comparable to that of a surgical knife; it is repeatedly checked between each animal to avoid any imperfections. [The name of the knife, *Chalaf*, is derived from the Hebrew verb 'to change', since it effects a change in the state of the animal from being forbidden as food whilst alive to being permitted to eat after *Shechita*.]

Subsequent to the act of *Shechita*, certain other procedures are mandatory, such as the covering of the blood of poultry or game with earth or ash *(Kissuy HaDam)*, the removal of forbidden fat *(Heleb)* and the removal, via the koshering process, of the residual blood in the meat (all of these have been discussed in detail e.g. by Grunfeld 1972). Prior to *Shechita*, the

animal has to be fit and healthy and capable of independent life. The latter point underlies the unacceptability of pre-stunning, according to the *Halacha*.

## C The physiology of *Shechita*

*Brain anatomy and physiology*

Although it comprises only about 2% of the body's weight, the brain receives 20% of cardiac output (Poole-Wilson 1989). The brain is sensitive in its requirements for oxygen and is generously supplied, mostly via the carotid arteries. A lesser supply may come via the vertebral arteries. The anastomosis between the two internal carotid arteries as well as with the vertebral arteries, forms a 'ring road' at the base of the brain. In cows this is the 'rete mirabilis'; in sheep, by way of contrast, the vertebral arteries are rudimentary, petering out before they get to the brain (Levinger 1995a and Figure 3). In man, this arrangement is the 'Circle of Willis' (see Figure 4).

The effect of having an arterial 'ring road' at the base of the brain is that if there is a stenosis or occlusion of one of the cerebral arteries, the brain region supplied by that vessel can still obtain an adequate perfusion via one of the other vessels. However, this is not the case if the carotids are opened, in which case blood flow follows the route of lowest resistance - see below).

Blood flow through the brain is kept at a steady level, despite quite wide variations in the prevailing blood pressure, through autoregulation (Haddy & Scott 1977). In the microcirculation of the brain, vessels dilate or constrict to keep tissue perfusion constant. However, there are limits to this corrective mechanism and (at least in man) autoregulation fails after a greater than 50% fall in blood pressure (Njemanze 1992; Kleinerman and others 1958).

*Cerebral blood flow and consciousness*

In clinical cardiological practice, a rare but (fortunately!) usually reversible complication of routine diagnostic coronary angiography is the provocation of ventricular tachycardia or ventricular fibrillation. When this happens, the collapse in cardiac output immediately leads to a failure of brain perfusion and the patient rapidly loses consciousness (Rossen and others 1943). The whole process can, under these circumstances, be timed very precisely by following the electraocardiogram (ECG). It takes less than 5 seconds for a patient lying on his/her back to lose consciousness during a cardiac arrest. An even quicker loss of consciousness would be expected in a standing individual because of the need for a greater driving pressure to get blood up to the brain

Not surprisingly, this is exactly what one finds when performing head-up tilt table testing for the investigation of patients with syncope (Grubb and others 1992). After an appropriate (~50%) fall in cardiac output, loss of consciousness follows in <5 seconds.

Another medical model germane to this discussion is the acute management of severe hypertension. It is of the greatest importance not to bring the blood pressure down too precipitously (Diringer 1993), otherwise, patients are at a high risk of stroke because of under-perfusion of the brain. The cerebral regions most likely to be affected in all of these examples of precipitous loss of brain perfusion are the cortical areas.

**D The immediate physiological effects of the *Shechita* cut – experimental data**

After the *Shechita* cut, blood loss is extremely rapid. In Dukes' classical studies (Dukes 1958), 33% of the animal's entire blood volume was lost in ~30 seconds and 50% within 1 minute. The fall in brain blood flow has been measured by means of a manometer placed in

would also not apply to sheep, in which the vertebral arteries terminate before reaching the brain.

The heart continues to beat for a few minutes after the *Shechita* cut. For the first minute, the force of contraction is maintained as venous blood from the periphery of the body continues to flow back to the heart despite the arterial blood being lost through the severed carotids. Within about one minute, lack of venous return leads to a reduction in cardiac preload. Cardiac contractility is diminished because of this, as well as the reduction in oxygen reaching the myocardium. However, the fact that the heart can beat for a few minutes after *Shechita*, means that this method of slaughter is very effective in terms of exsanguination. This has positive health and hygiene implications.

*In summary*, the collapse in the arterial blood pressure that follows on from the severance of the carotid arteries at *Shechita*, causes a dramatic fall in cerebral perfusion. The cerebral cortex is particularly sensitive to this. Consciousness is lost rapidly (under 5 seconds) and irreversibly and the animal could be said to be dead by about 30 seconds.

## E Other physiological mechanisms maintaining brain structure and function - experimental data on the effects of *Shechita* on cerebrospinal fluid pressure

*Cerebrospinal fluid pressure*

The brain is a very soft and hollow structure and its usual shape and structure are, to an extent, maintained by the pressure of cerebrospinal fluid (CSF) within the cerebral ventricles (Davson 1960 and Walton 1993). The shape of the brain is also maintained by the gradient between the relatively high pressure of the arterial blood flowing into it and the lower

pressure in the veins draining blood from the brain. The venous pressure, in turn, also has an influence in maintaining the correct pressure in the CSF (Cohen and others 1970).

Any sudden change in these pressures can have a devastating effect upon brain function (Levinger 1970). A good human model of this situation is that of the patient with hydrocephalus (Adams and others 1997a), for example due to obstruction to the flow of CSF from the cerebral ventricles to the outer surface of the brain. The only effective treatment for this is implantation of a shunt – usually between the brain ventricles to one of the great veins or to the right atrium. The shunt contains a valve so that there is no reflux of blood back up into the brain. There are documented cases of shunt obstruction, which produces an increase in brain pressure, headache and then diminished consciousness (Gardner-Medwin 1996). In addition, but less commonly, there are descriptions of leaks of the shunt valve, causing brain irritability followed by collapse and unconsciousness. Other causes of reduction in CSF pressure are also recognised (Khurana 1996).

*Pressures within the brain ventricles*

After *Shechita*, the pressure within the brain ventricles falls even more rapidly than the fall in blood pressure within the internal maxillary artery. This is because the collapse in jugular venous pressure, without replacement by arterial blood, causes a fall in brain perfusion pressure. The maintenance of brain structure is impaired as a kind of 'implosion' of the brain occurs (Levinger 1976).

## F Behavioural responses to the *Shechita* cut

Direct observation of the animal's responses, prior to, during and after *Shechita* are both fascinating and important, especially since, in the assessment of potentially painful

experiences by animals, pseudoaffective responses are virtually a gold standard by which to assess how stressful or painful such experiences are.

a) *The free animal prior to Shechita*

In accordance with the *Halacha*, *Shechita* is performed upon one animal at a time and care is taken not to allow one animal to see another one being killed. There is no sign that the animals are frightened of impending death since they continue walk around calmly and to ruminate normally.

b) *Handling prior to Shechita*

There is no direct evidence of behavioural signs of stress in anticipation of *Shechita*. To some extent this may be attributable to calm and purposive handling of the animal or bird. The restrained animal is calm and still prior to the *Shechita* cut. (It does not take much imagination to see that even at the practical level this must be so, otherwise the chances of making an invalid cut would be high).

c) *Immediate response to the Shechita cut*

Prior to, at the moment of the Shechita cut and immediately after there is no flinching and no reflex defence reactions suggestive of any feelings of pain. It can be deduced therefore that the cut itself is not painful. This is in contrast with the observable effects of a painful stimulus inflicted upon an animal.

d) *Collapse*

With the loss of consciousness (Levinger 1995b), animals usually collapse onto the ground within about 10 seconds. It is very unusual for an animal to make any attempt to get up and in those few cases where this has been observed, further investigation showed that the *Shechita* cut had been incomplete. It was *never* the case that when an effective cut of the carotids had been achieved, that brain blood flow was maintained by arterial blood reaching the brain through the vertebral arteries.

e) *Laboured respiration*

After about 30 seconds, a strained and noisy form of slow breathing supervenes, possibly related to muscular spasms of the diaphragm or unusual signals to the respiratory muscles from the hypoxic brain. Unsurprisingly, this does not improve tissue oxygenation and the form of breathing has also been observed in the severed head.

f) *Muscular spasms*

Also after about 30 seconds, strong muscular spasms frequently cause the limbs to thrash violently (Levinger 1995c). These are reflexes probably due to hypoxia of the spinal cord causing abnormal efferent signals to the muscles; they are in no respect at all a conscious reaction to pain. This phase can last for up to 4 minutes.

## G The issue of pain

The crucial animal welfare question in relation to methods of animal slaughter is whether they cause pain. It is not quite as straightforward to answer this question as might be hoped for a number of reasons. The first is that pain itself is not easy to define (Wall 1989), beyond it being an unpleasant sensation or awareness in response to a physical or mental stimulus. Secondly, it is an intrinsically subjective experience. Any notion that we might have of pain in another person or animal is dependent on our imagining how we ourselves would feel in that situation and projecting the same onto the other person or animal. Thirdly, in the absence of an articulate expression of feelings, which is clearly impossible in the case of animals, we can only infer the presence of pain in others by observation of behavioural responses, for example withdrawal from the stimulus, efforts to escape from the latter, cries or other vocalisations etc.

The hope that scientific methods could overcome these limitations, for example through physiological measurements of an animal's responses, has not been realised very fully, not

least because the issue is extremely complex and the data are difficult to interpret. More obvious parameters such as increases in heart rate or blood pressure due to activation of the body's sympathetic ('fight/flight') system are non-specific. This is also the case for neurohumoral markers such as plasma cortisol, or β-endorphin. The subject of measurement of pain (in particular the virtual impossibility of establishing scientifically whether pain is being experienced or not) has received a lot of attention in relation to a similarly tricky topic - whether a foetus can feel pain (Giannakoulopoulos and others 1994).

There are, though, a few key points that are generally accepted, e.g. a functioning, conscious brain is necessary for the perception of pain. Studies have been performed using positron emission tomography, (PET), which can measure regional cerebral blood flow as an index of neuronal activation, to investigate the brain activation in live, awake humans. These studies have shown that within the brain, the cerebral cortex is essential for the perception of pain, whether the origin of the pain is the skin surface (Jones and others 1991), the oesophagus (Aziz and other 1997) or the heart (Rosen and others 1994). In addition, the painful stimulus from the periphery has to be adequate to activate the pain pathways. If we consider the situation with *Shechita*, we can see that i) the drastic and rapid fall in cerebral blood flow immediately after the *Shechita* cut inactivates the cerebral cortex by depriving it of its blood supply leading to a rapid loss of consciousness; in addition; ii) the exquisite sharpness of the *Chalaf*, coupled with the smoothness of the cut, mean that as for a surgical incision, there is minimal stimulation of the cut edges, typically below a level adequate to activate the pain pathways.

One further medical event relevant to this discussion is the experience of stroke. Regardless of the mechanism of stroke (whether thromboembolic or haemorrhagic) they are *painless*, as attested to by patients who retain or regain the power of speech after a stroke.

*Measurements of brain electrical activity*

Brain electrical activity has been assessed from the surface of the scalp - the electroencephalogram, EEG, [Adams and others (1997b and c) and Goetze and others (1959)] and less commonly, by electrical sampling at the cortical surface, the electrocorticogram. There are a number of waves recognised on the EEG. The dominant wave during wakefulness is the $\alpha$ wave. As wakefulness is lost, for example during anaesthesia, the $\alpha$ waves give way to $\beta$ and $\gamma$ waves. After the *Shechita* cut, a $\beta$ rhythm is also noted after a few seconds, before $\gamma$ waves predominate, the trace being flat only after about 2 minutes (Nangeroni & Kennet 1963).

There are several reasons why the EEG cannot be used as a simple marker of consciousness. Most dramatically, EEG activity can even be demonstrated in severed heads (Swaab & Boer 1972 and Mayevsky & Chance 1975) or after captive bolt stunning (Daly and others 1988). Since these decapitated animals are clearly dead, it can be deduced that the mere presence of an EEG trace certainly does not equal consciousness. On this basis, the requirement stated by a number of the critics of *Shechita*, that the slaughtering method of choice is the one that is first to produce an entirely flat EEG, is irrelevant.

However, even if one does regard this technique as being of significance, there are data (Schulze 1978) to suggest that an isoelectric EEG is achieved quicker with *Shechita* than with other methods. Another feature of interest in Schulze's paper was the observation that whereas a major stimulus to the body produced a noticeable change in the EEG, the pre-*Shechita* and immediate post-*Shechita* EEGs were the same, consistent with the cut being painless.

Exploration of the corneal reflex has also been applied to the study of pain perception in animals (Pappworth 1984). In man it is well known that touching the cornea elicits a reflex involving the Vth cranial nerve that brings about a withdrawal from the stimulus or a closing of the eye. The length of time until the disappearance of the corneal reflex has been considered by some to be a marker of the time to loss of consciousness. However, a more detailed consideration of the corneal reflex reveals that it is dependent *not* upon the cerebral cortex, but upon lower brain structures, particularly the brainstem. It is therefore quite possible to have an intact corneal reflex for a little while *after* the loss of the capacity to think or feel.

This remains true regardless of the fact that a stunning technique which might severely damage the brain stem, e.g. captive bolt stunning, could conceivably cause the corneal reflex to be lost a little quicker than *Shechita* (Nangeroni & Kennet 1963). Conversely, after *Shechita*, despite a loss of consciousness within less than 5 seconds, the corneal reflex may still be elicited for ~20 seconds.

A more sophisticated evaluation of cerebral function has been that of measuring visually evoked potentials. A stimulus to the animal, such as a light being shone into its eye, activates the visual pathway as far as the visual association area in the occipital cortex. This activation can be detected by scalp electrodes over the occiput or, more invasively, electrodes implanted over the occipital cortex (Adams and others 1997b and c; Goetze and others 1959; Daly and others 1988). Once again, some critics of *Shechita* have said that to give the 'benefit of the doubt' to the animal, attention should be paid to select the method of slaughter associated with the quickest loss of evoked potentials (Daly and others 1987). However, in the same studies, the authors acknowledged that i) evoked potentials can be

elicited in anaesthetised animals and ii) there is no evidence that a persistence of the ability to show evoked potentials equals consciousness; it is just that they felt that "when the cortex fails to respond to external stimuli at so rudimentary a level then it would seem reasonable to conclude that a state of insensibility exists." Exactly of which doubt the animal should be given the benefit is discussed below.

In summary, there are no convincing data that *Shechita* is anything other than painless. The failure of a prestunned animal to show a number of rudimentary reflexes has little significance, because someone whose brains had been blown out would also fail to show rudimentary reflexes. Conversely, as described above, a severed head can still show EEG signals and evoked potentials can still be elicited in anaesthetised animals and men. In the light of the physiological considerations above, and some reservations about the effects of stunning on an animal, it is our opinion that *Shechita* might be a more effective method of eliminating an animal's sentient faculty than stunning.

## I Stunning

Stunning refers to the process of rendering an animal insensible prior to exsanguination (bleeding out) and death. It is often assumed, although with no positive proof having been adduced, that stunning is a kindness to the animal to be slaughtered. Some use the phrase 'humane stunning'. There are a number of mechanisms of stunning:

i) Mechanical stunning; with this a severe blow is delivered to the head of the animal (Daly 1987). The commonest method for this is that of the 'captive bolt'. This device is a form of gun which, when fired, makes its central metal core come out a short distance. Despite the small distance, the bolt emerges with considerable speed so that its momentum and therefore the force of the blow to the head, is very great. The captive bolt method requires accurate

placement of the pistol on the animal's head and a degree of restraint of the animal is necessary to facilitate this.

ii) Electrical stunning causes insensibility in the animal by means of a large electrical discharge across the animal's head. The electrical discharge is likely to achieve its effect by a number of means, the most likely of which is asphyxia due to paralysis of the respiratory muscles (Hillman 2003). Massive sensory stimulation is probable and this might be extremely painful (Hillman 1993), although the paralysis of the motor system would mask important signs of distress. Electric shock therapy has never had any application in human anaesthesia. On the contrary, in the one situation in which an electrical discharge through the brain is used therapeutically, i.e. treatment of depression by electroconvulsive therapy (ECT; Gelder and others 1990), full general anaesthesia has to be given first, including paralysing agents because of the severe muscle damage and possible fractures which occurred with the older, so-called unmodified, ECT.

iii) Other methods of stunning have been developed. The main one of these is that of narcosis - making animals sleepy to the point of being comatose - by their breathing carbon dioxide enriched air. $CO_2$ narcosis is almost exclusively used in poultry slaughtering. As with the other methods of stunning, its introduction was effected with no direct evidence of any reduction in distress on the part of the animal. There have, though, been many human physiological experiments on $CO_2$ rebreathing. Such studies have shown that before subjects get to the sleepy phase of $CO_2$ intoxication, there is an extremely distressing, agitated phase during which the increase in inspired $CO_2$ provokes a severe and frightening air hunger (West 1990). There are data to suggest that turkeys stunned by this method also go through a similarly distressing phase prior to narcosis (Erhardt and others 1996). Even if other gases, such as argon, are used for stunning, the same essential mechanism applies, namely deprivation of oxygen and the same agitating, air hunger effects would be expected.

One feature that will be noted about the first 2 types of stunning is that the nervous system is directly damaged, before the final act (i.e. sticking) which terminates the life of the animal. This damage to the nervous system unquestionably makes the animal a *Trefah* (i.e. unfit for *Shechita* because of an existing injury or abnormality). Even in the case of any putative method of stunning which did not inflict direct damage to the nervous system, the stunned animal would be unable to be seen to stand up fit and well prior to its final despatch, an essential *Halachic* prerequisite.

**J 'Giving the animal the benefit of the doubt'**

One comment that has been made by some in discussions on animal welfare is that, while it is accepted that there is no scientific evidence of *Shechita* being painful, prestunning is nevertheless desirable because the animal should be given 'the benefit of the doubt.' There is an assumption, even described by some as a 'tenet of belief', that stunning prior to slaughter is a kindness to the animal. The argument underpinning this has been said to be 'intuitive'.

Now, besides the fact that 'intuitive' used in this context equals 'unscientific', it might also equal 'irrational' or worse still 'untrue'. For example, *intuitively* one might imagine that (in States in which the death penalty is applied) rendering a human being unconscious prior to execution by means of a massive blow to the head would be a painful and unacceptable method. The same could be said for electrical stunning or gaseous asphyxiation.

From the aspect of meat hygiene, it is generally accepted that the more complete the exsanguination of the animal, the better. It has been observed that stunned animals (even animals stunned shortly *after* a Shechita cut) exsanguinate to a lesser degree than animals that have not been stunned. One might hypothesise that the stunning leads to a state akin to

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**Legend to Figures**

**Figure 1** Anatomy of the neck of a bovine to highlight the main structures severed by the *Shechita* cut (from Levinger [11]). 1. vertebral artery; 2. oesophagus; 3. sympathetic chain; 4. trachea; 5. spinal cord; 6. vertebral vein; 7. vertebra; 8. jugular vein; 9. carotid artery; 10. vagus nerve; 11. wool.

**Figure 2** The *Chalaf* or *Shechita* knife

**Figure 3** Anatomy of the arterial supply of the head of the sheep and the bovine (from Levinger 1961 and Sporri 1965 – see reference 11. Note that the vertebral arteries of the sheep do not anastomose at the base of the brain with the internal carotids.

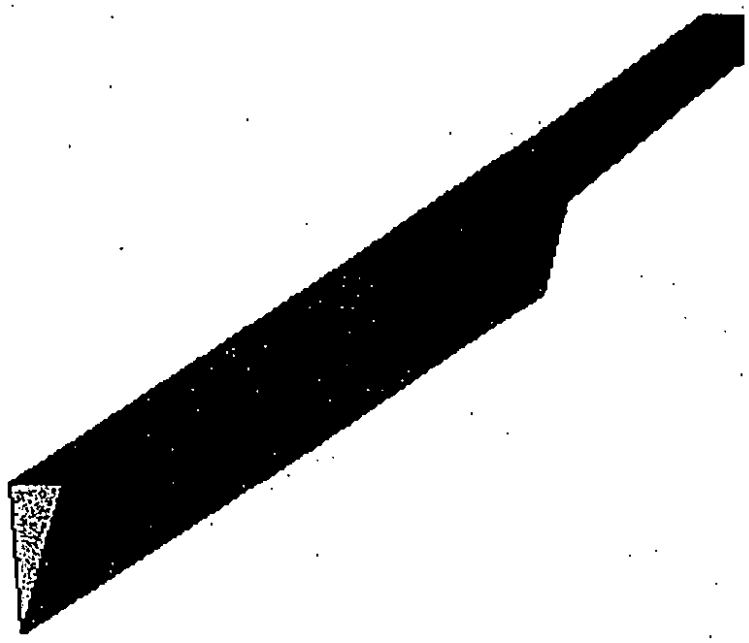
*Sheep*: 1. ramus medialis of the vertebral artery (after its entry into the vertebral canal); 2. anastomosis between the rami mediales of both sides; 3. anastomoses between the rami mediales at the level of the epistropheus; 4. condylic artery after leaving the hypoglossal canal; 5. epidural rete; 6. communication between the vertebral artery and the epidural rete; I-III cervical vertebrae; a. occipital bone; b. atlanto-occipital foramen; c. temporal bone; d. hypophyseal fossa; e. hypophysis; f. ethmoidal fossa.

*Bovine*: 1. vertebral artery; 1' in the transverse canal; 2. ramus medialis of the vertebral artery; 3. anastomoses between the rami of both sides; 4. anastomosis between the ramus medialis of the vertebral artery and condylic artery; 5. epidural rete; 5' posterior part of the rete, which communicates with the vertebral and condylic arteries; I-III cervical vertebrae; a. occipital condyle; b. atlanto-occipital foramen; c. occipital bone; d. hypophyseal fossa; e. hypophysis; f. ethmoidal fossa.

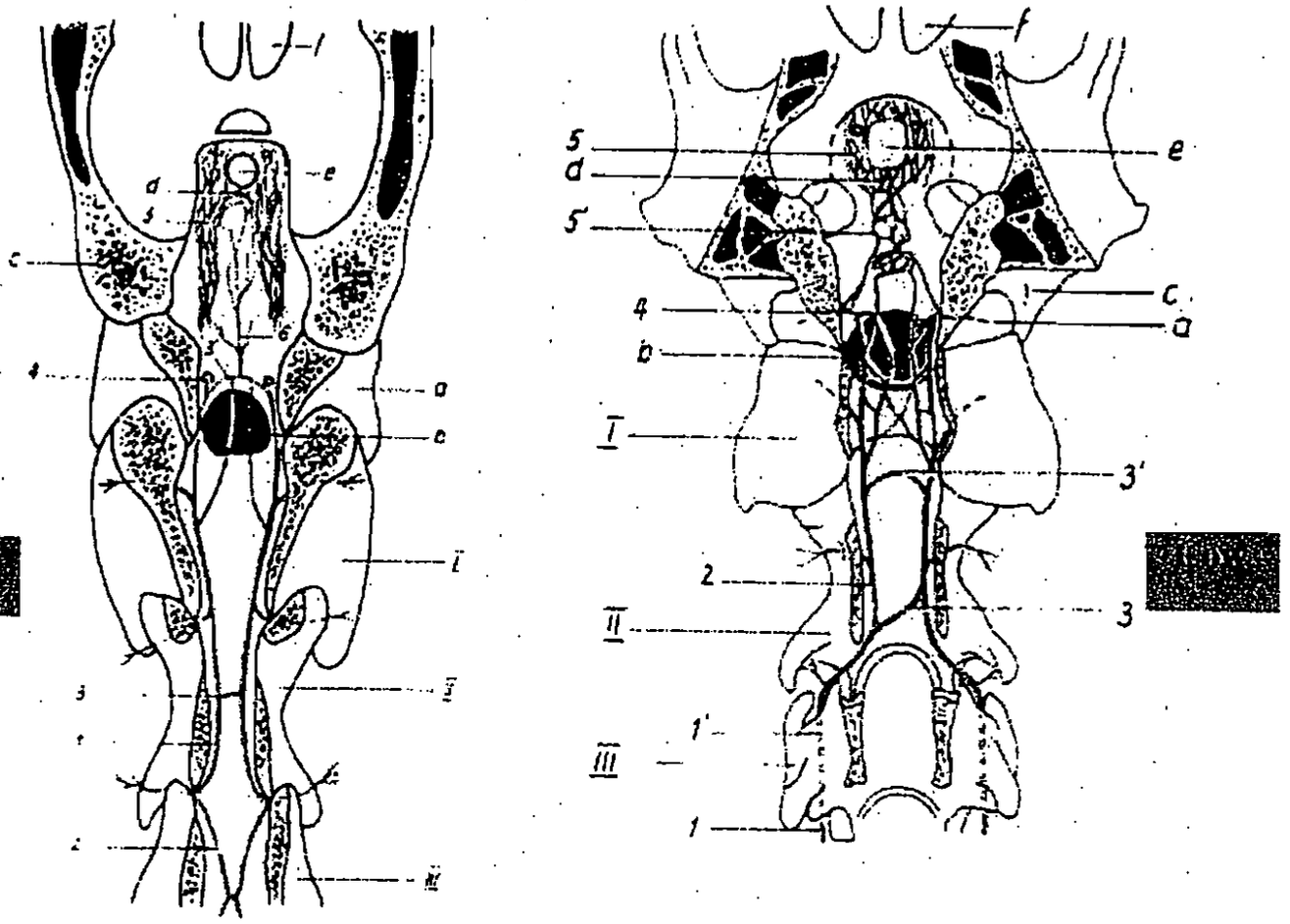
Figure 4 The circle of Willis (after Sir Christopher Wren)

Figure 5 Effect of the Shechita cut on blood flow through the main arteries to the brain. A prior to the cut; B the cut; C after the cut. Note that blood flow is in the direction of least resistance.

Figure 2

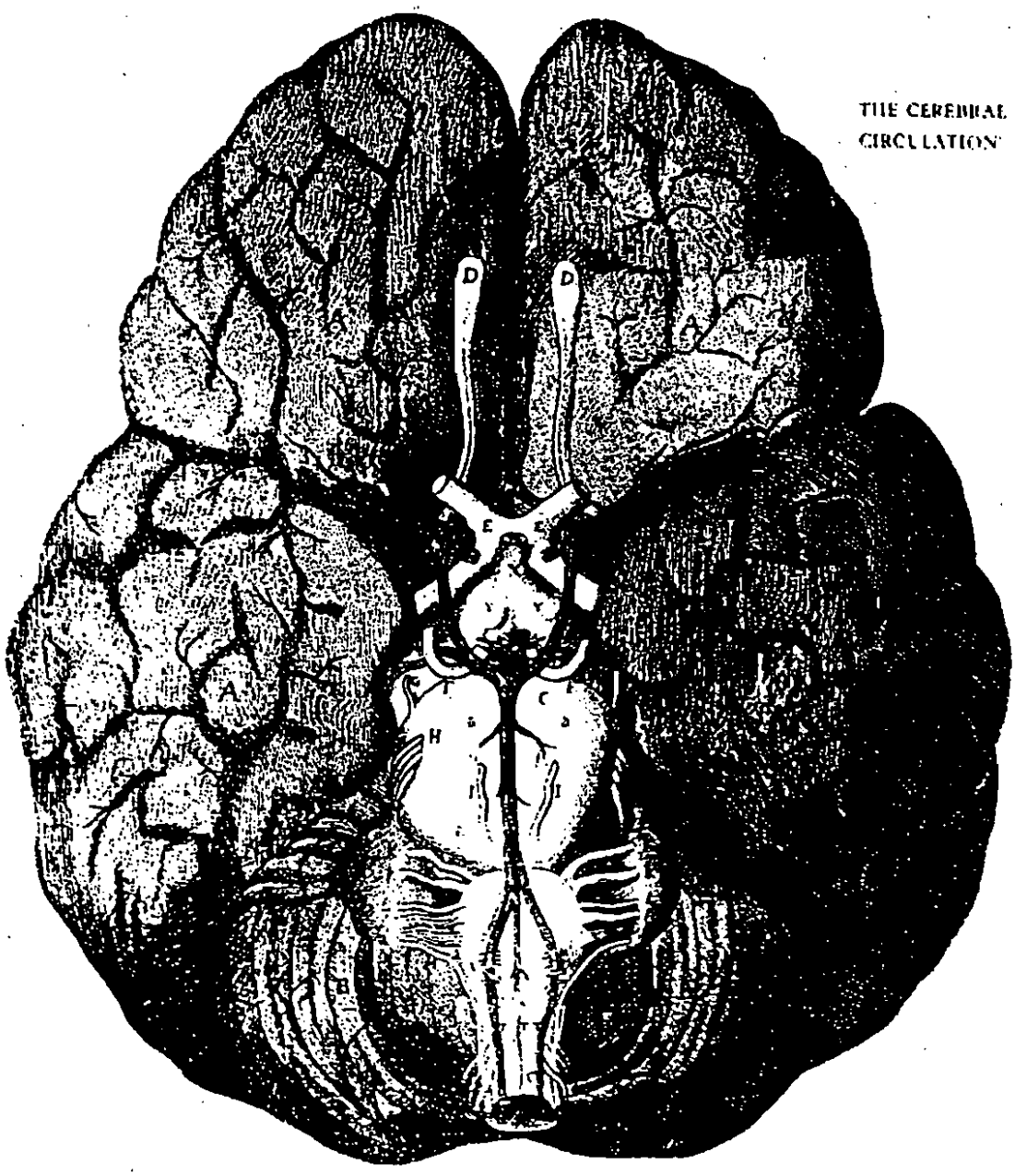


## Figure 3 - Cerebral Circulations

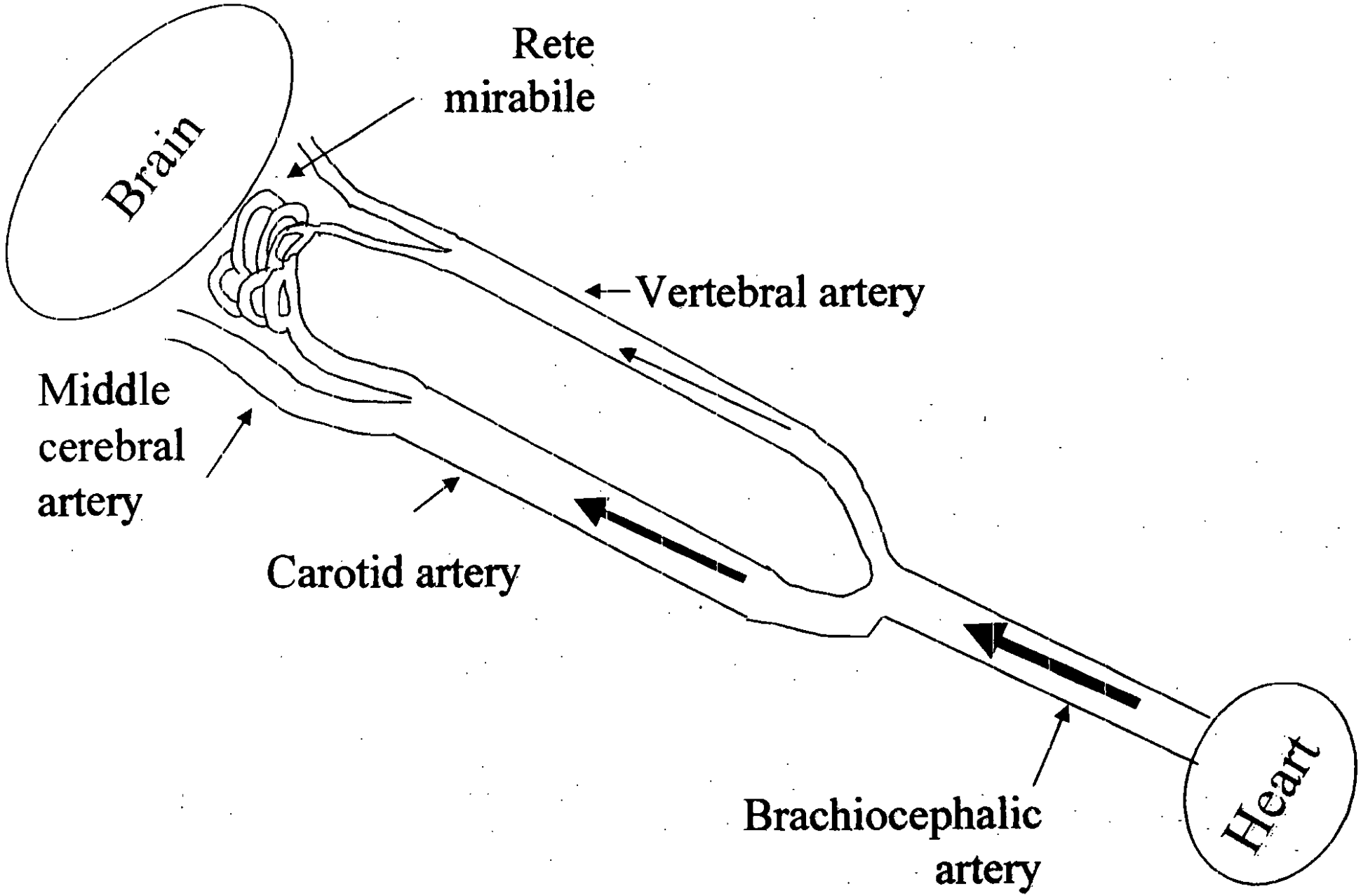


# Figure 4

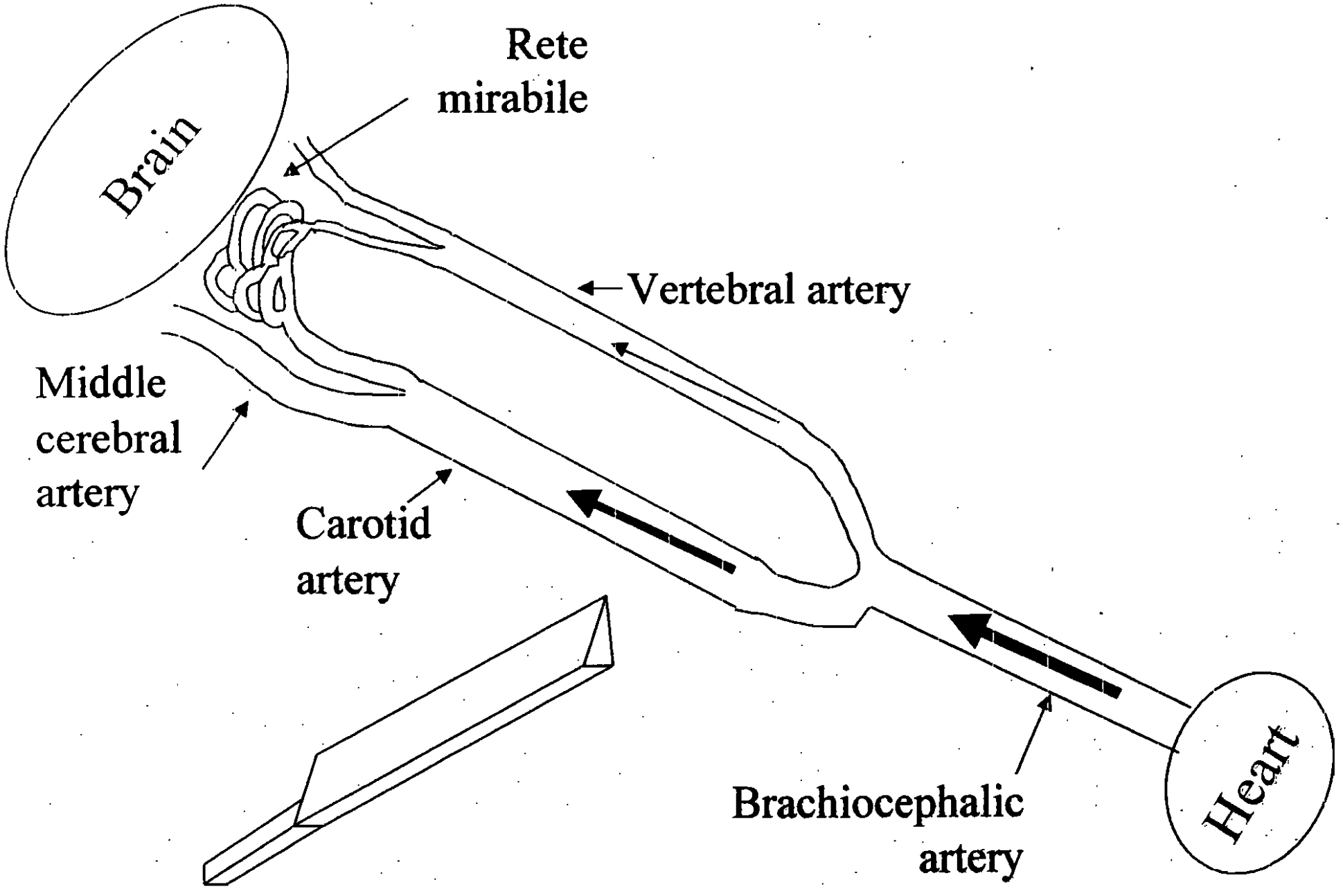
## The Circle of Willis (by Sir Christopher Wren)



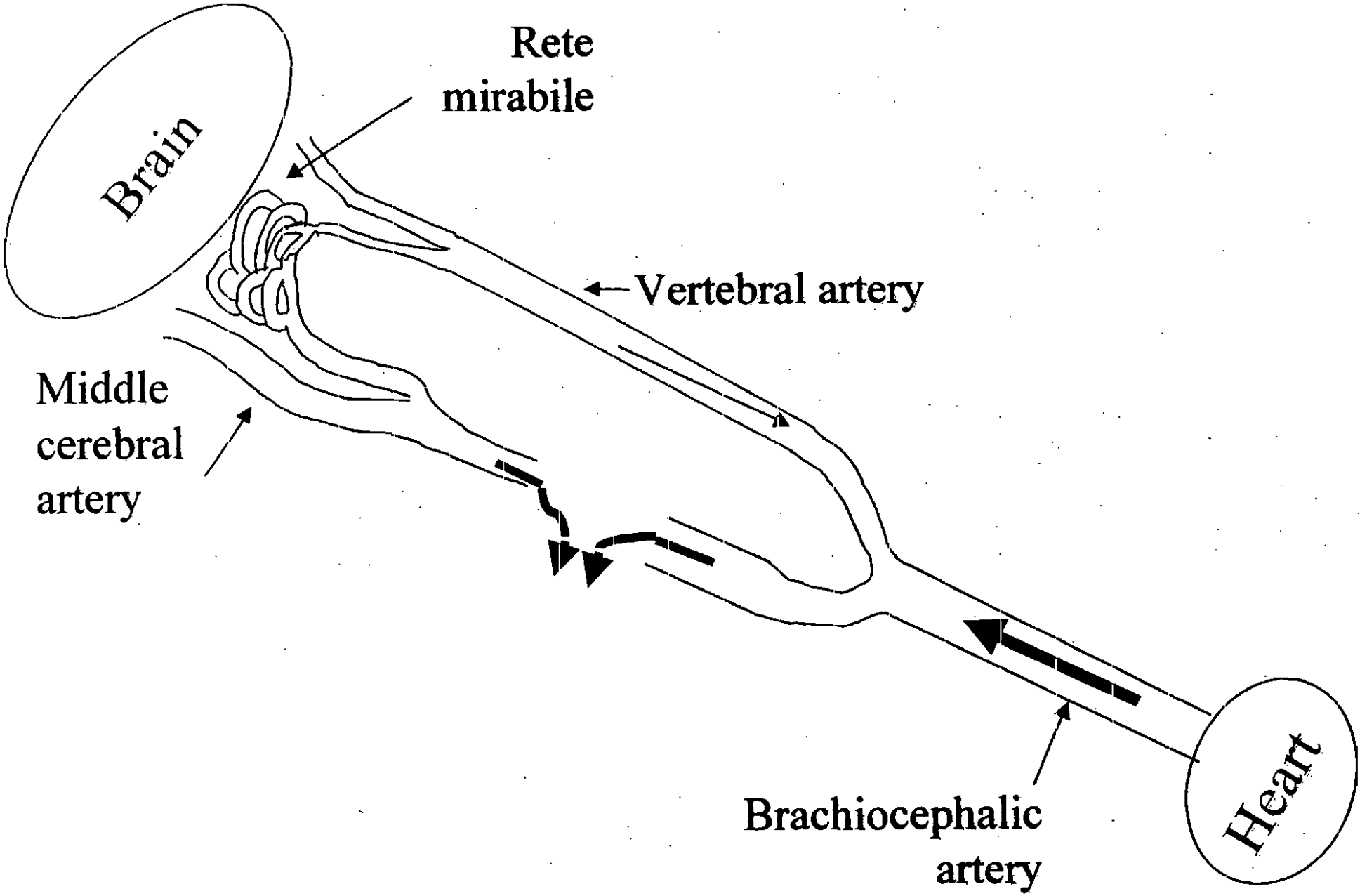
A


Brain
Rete mirabile
Vertebral artery
Middle cerebral artery
Carotid artery
Brachiocephalic artery
Heart

B


Rete
mirabile
Brain
Vertebral artery
Middle
cerebral
artery
Carotid
artery
Brachiocephalic
artery
Heart

C


Rete
mirabile
Brain
Vertebral artery
Middle
cerebral
artery
Brachiocephalic
artery
Heart

## 1. EDUCATION and QUALIFICATIONS

1971-1978 - Hymers College, Hull (Governors' Scholarship)
1979-1982 - Pembroke College, Cambridge (Medical Sciences Tripos)
1982-1985 - Charing Cross and Westminster Medical School, University of London

BA - Cambridge University 1982
MBBS - London University 1985
MA - Cambridge University 1986
MRCP - Royal Colleges of Physicians 1990
MD - London University 1996

Fellowship of European Society of Cardiology 1997
Fellowship of American College of Cardiology 1997

Fellowship of Royal College of Physicians, London 2001

## 2. CURRENT APPOINTMENTS

**Senior Lecturer in Cardiology, Faculty of Medicine, Imperial College of Science, Medicine and Technology**
**Honorary Consultant Cardiologist, Ealing, Hammersmith, Royal Brompton and St Mary's Hospitals, London**
**Director of Research and Development, Ealing Hospital NHS Trust**

## 3. PREVIOUS APPOINTMENTS

1 November 1994 to 30 December 1996
Hon Lecturer / Senior Registrar in Cardiology, Royal Postgraduate Medical School and St Mary's Hospital
1 August 1992 to 30 December 1996
MRC Clinical Scientist, Hammersmith Hospital.

## 4. GRANTS and AWARDS

1 BHF Intermediate Research Fellowship 31.12.96 - 20.12.98 (£109 600)
2 MRC Core grant for Neurocardiology (£10 000 over 2 years, from Feb 1997 to Feb 1999)
3 *(Jointly)* A study to identify the brain regions which participate in the activation and deactivation phases of the baroreflex. (British Heart Foundation PG 96/049) £87 052
4 *(Jointly)* Does altered central nervous processing of pain stimuli explain silent myocardial ischaemia and syndrome X ? (British Heart Foundation PG 94/039) £60 389
5 *(Jointly)* Detection of oral bacteria in samples from diseased coronary arteries using molecular techniques. (British Heart Foundation PG 98/093) £84,054

## 5. SUMMARY OF PREVIOUS RESEARCH

During the last 10 years I have studied the structural, metabolic, microcirculatory and neural regulatory responses to myocardial ischaemia and injury. This work has formed the basis of a number of grant awards and peer reviewed publications. My completed research and the proposed studies were graded Alpha plus by the MRC in its quinquennial review of the Cyclotron Unit in 1997.

## 6. TEACHING

Undergraduate teaching (Firm leader for 2nd & 3rd year Imperial College undergraduates)
Lectures on cardiovascular physiology to year 1 students.
Postgraduate teaching of junior staff at Ealing Hospital
University of London Diploma in Internal Medicine Course.
University of London Diploma in Diploma in Cardiology.
I examine for both of these and for the MSc in Cardiology.
I also participate in the MSc course in Medical Ultrasound
I have co-supervised 3 MD candidates.

## 7. PUBLICATIONS

Papers in peer-reviewed journals (36)
Books (2)
Chapters (6)
Main abstracts (55)

## 8. JOURNAL REVIEW - 11 major journals and ABSTRACT REVIEW for European Society of Cardiology

## 9. MEMBERSHIP of PROFESSIONAL SOCIETIES, GROUPS and COMMITTEES

British Medical Association
British Cardiac Society
European Society of Cardiology
American College of Cardiology
Royal College of Physicians of London

Working groups on coronary microcirculation and on heart failure, ESC
British Society of Heart Failure (part of BCS)

North Thames (West) Specialist Training Committee for Cardiology

# FAWC SEMINAR MAY 2002

## QUESTIONS AND ANSWERS FOLLOWING SPEAKERS

**Question 1:** To what extent does a Shochet's training involve pre-slaughter handling?

**B Fagil:** The responsibility for the animals prior to and up to the point of slaughter is the responsibility of the abattoir personnel. A Shochet's obligation is to ensure, once the animal has been correctly restrained that his Shechita cut is carried out correctly and that the animal is not restrained in the pen longer than necessary. That said, the welfare of animals is extremely important to us and we will not hesitate to report any misdemeanours in that area to the OVS responsible to the abattoir. On a personal level, I can assure you I would not be prepared to work in an abattoir that was cruel to animals.

**Question 2:** Is it correct to say that the Shochet sometimes cleans the neck of the animal or shears the wool off the neck of a sheep, and when is this carried out?

**B Fagil:** Dayan Ehrentreu gave the five cardinal rules of Shechita. In order to ensure that the Shechita cut can be administered without interruption, immediately prior to carrying out the cut we wash the neck of the animal to ensure no mud or suchlike can interfere with the cut. In the case of sheep, in order to avoid any "burrowing" or "stabbing" the abattoir personnel will shear sheep immediately before they are brought forward for Shechita.

**Question 3:** Could Dr Rosen comment on the remarks that have been made elsewhere that during Shechita it is possible that clotting can take place in the carotid arteries which will impede the rate at which the animal will die?

**S Rosen:** When an animal is restrained in the upright box and the neck held taut, clotting does not seem to take place. The arteries are of sufficient calibre and the blood flow is of sufficient force to ensure that blood clots do not develop. Even if clotting were to take place as an animal fades away, it will have lost by then 40% of its blood and will be certainly unconscious well before then.

**Question 4:** Corneal reflexes are considered a good indication of consciousness and is a fairly easy technique to apply. Dr Rosen said that this is mediated through the brain stem. How would this be affected by a massive drop in blood pressure?

**S Rosen:** The cortex would appear to be the first thing to go. In other words, the animal is more likely to lose cortical function before losing the corneal reflexes and therefore just because corneal reflex is present, it should not be interpreted as a proof that the animal is still cognitively or surgically intact – which is the way vets have interpreted corneal reflex. We find in humans the reverse. You can have people with neuro-syphalis who have no corneal reflex at all but who still function reasonably.

I believe that corneal reflexes operate from a separate network and people should be more circumspect in arguing from one level of networking in the central nervous system, to another.

**Question 5:** How does a Shochet judge an effective cut and what happens if he is unhappy with the quality of the cut?

**B Fagil:** The Shochet is trained to a high degree and will have worked under supervision for a considerable time before he carries out Shechita unsupervised. He can see immediately if the cut has been carried out correctly. Should the Shochet feel that after he has completed his cut the animal has not been killed properly, he will immediately instruct the pen operator to stun the animal. This happens very rarely.

**Question 6:** Are Jewish Religious slaughtermen paid on piece work?

**B Fagil:** As was mentioned earlier, all Jewish Religious slaughtermen are on a salary and are employed by a Shechita Board. A Shechita Board in the United Kingdom is run by the Jewish Community for the Community and is non-profit making. There is, therefore, no pressure on a Shochet to work faster and thereby compromise his standards.

**Question 7:** Scientific Papers have referred to carotid ballooning which has led to the animal getting up after a Shechita cut has not been done correctly. How often have you seen this happen?

**I McLeish:** I have only seen this happen once in sheep. The Shochet's knife is very sharp and it is a common experience that one often does not feel a sharp cut until after you have seen the blood flowing from the wound. If the wounds edges come together, one also feels the wound. Provided the chin lift remains up, in the case of cattle, and provided the slaughterman holding the sheep keeps the wound apart, ballooning does not take place and I feel sure the animal feels no pain.

**N C Oster:** This Seminar was organised jointly by the National Council of Shechita Boards and the Board of Deputies of British Jews. The Senior Vice President of the Board of Deputies is Henry Grunwald QC, who will close the Seminar.

**H Grunwald QC.**

I am sure that I am speaking on behalf of all of us when I express our gratitude to our four Speakers, who have given of their time to prepare their carefully thought out lectures and present them to us today.

As head of the Beth Din of the Chief Rabbi, Dayan Ehrentreu has given generously of his time and busy schedule to be here today and give us a most lucid and comprehensive talk on Shechita and its importance to the Jewish Community.

Rabbi Fagil is a Shochet respected by his colleagues and the Community and it has been a privilege for us to hear from him.

Ian McLeish has also interrupted his normal duties to give us the benefit of his experience of working in abattoirs, and we are grateful to him for his kind words about our personnel and Shechita, in general.

Dr Rosen has brought together his knowledge as a doctor and his experience and learning of Shechita from Rabbi Sassoon, who unfortunately passed away a few years ago, and Rabbi Dr Levinger, a veterinarian, now living in Israel, author of the book *"Shechita in the light of the year 2000"*.

We are also grateful to the joint organisers of today's Seminar, Sandra Clark who works in the offices of the Board of Deputies of British Jews, and Michael Kester, the Executive Director of the National Council of Shechita Boards.

And, finally, a vote of thanks and our appreciation to the Chairman of today's Seminar, Charles Oster, President of the National Council of Shechita Boards.

***** **END** *****