mulation energy and remains stable upon subsequent application of shear.

On changing the oil from toluene to either octane or tetradecane it was observed that no stable emulsions could be prepared for formulation energies below approximately 2600 J and additionally stable emulsions could only be formed for triton X-100 concentrations between 8 and 12 wt%. As for the toluene system, water is always the continuous phase. The oil domains in these two systems do not undergo the rapid and constant coalescence and rupture that occurs in the toluene system. Instead they collide, interact and then separate. In the octane system both unrestricted and restricted diffusion of the oil droplets occurred. Using this information a characteristic spacing between the droplets of 0.2 to 0.4 μm was measured. In the tetradecane system, the droplets undergo restricted diffusion only for the measurement times used.

The stability of the emulsions prepared with octane and tetradecane was significantly enhanced and this was seen to increase as the chain length of the oil was increased. Ostwald ripening is found to occur in all three systems.

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Thesis Abstract: Sippenhaft in the Third Reich: analysing the ‘spectre’ of family liability punishment against opposition in Nazi Germany 1933–1945

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Abstract of a thesis submitted for the Degree of Doctor of Philosophy, University of New South Wales, Australia, 2004

This thesis examined the phenomenon of Sippenhaft, the punishing of family members for the crime of a relative. This assessment was restricted to investigating the incidence of Sippenhaft against those considered by the Nazis to be ‘German’ (Reichsdeutsche) or ‘of German blood’ (Volksdeutsche) The infliction of punishment regardless of the innocence or guilt of the individual determines that, practically applied, this policy must be considered a device of terror. Specifically, instances of Sippenhaft against civil Germany within the military and against particular resistance groups were investigated.

It was against the external Soviet sponsored ‘National Committee for a Free Germany’ (NKFD) and ‘League of German Officers’ (BDO) resistance groups and in particular after the assassination attempt on Hitler on 20 July 1944 that Sippenhaft came closest to becoming a practical reality. Assessing the manifestation of Sippenhaft involved assessing the dissemination of orders and directives from above as well as how these were, or were not, put into practice. It also relied on establishing an understanding of how Sippenhaft was practically applied against families. This involved contacting numerous family members connected to various German Resistance groups, both within the 20 July coup attempt and the NKFD and BDO resistance groups, to determine if they were placed under arrest in accordance with family liability. Their stories of arrest and imprisonment reveal how this terror became a reality. These individuals ranged from siblings, wives and parents to young children. Many of these children were arrested and housed in a specially created Sippenhaft ‘children’s home’.

As a result, this thesis is focused to a degree in the period following 20 July 1944, when the practical application of Sippenhaft was mostly
achieved and adds further to the awareness of the radicalisation of the Third Reich in the closing stages of the war. The investigation into this period after 20 July revealed that while many of the families connected to the German Resistance were punished, within the military in general, despite the widespread and open threat, *Sippenhaft* was not practically applied. Similarly, threats made against the German public were seldom followed up with actual arrests. In other words, within these two domains in Nazi Germany, *Sippenhaft* was never practically applied with any regularity. Consequently, this thesis offers a deeper comprehension of the potency of fear over practice, as a means of social coercion and how this was practically achieved. Rather than being used as an unconstrained device of terror, *Sippenhaft* was largely restricted in its extent and capacity. How effectively these fears were created and sustained are the main focus of this thesis.

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**Thesis Abstract: Mast Cells and Microflora in the Possum cul-de-sac**

PATRICIA MARY MAHONEY

Abstract of a thesis submitted for the Degree of Doctor of Philosophy, University of Otago, New Zealand, 2004

Keywords: possum, reproduction, mast cells, cul-de-sac, stereology

Mast cells are a common feature of the vaginal cul-de-sac of female brushtail possums. In the reproductive organs of other mammals empirical studies have found that mast cell numbers change at different stages of the reproductive cycle. The reason for the presence of mast cells in the cul-de-sac is unknown but may reflect microbial presence as mast cells are typically associated with biological responses to parasitic and/or bacterial invasion in gut and pulmonary tissues. Alternatively, it may indicate a role for mast cells in marsupial reproduction.

This study will attempt to address the significance of mast cells in the cul-de-sac of the brushtail possum with the hypothesis: "That mast cells in the vaginal cul-de-sac of the brushtail possum undergo numerical, spatial and morphological changes during different reproductive states." This investigation will assess whether the changes are due to microbial invasion or reproductive processes.

Cul-de-sac tissues were collected aseptically for microbiological, stereological and TEM analyses, from female adult possums (*n* = 6/group) that were lactationally anoestrous or in the follicular or luteal phases of the oestrous cycle, where oestrous cyclicity was induced by the removal of pouch young and reproductive status confirmed by laparoscopy. A similar analysis was undertaken on untreated seasonally anoestrous animals and those treated with subcutaneous implants of oestradiol 17β (*n* = 6/group) as well as juvenile animals (*n* = 5). Microbial populations were quantified and bacteria identified by media-culture and gram staining. The fractionator and optical disector stereological methods were used to quantify mast cell populations in both the epithelial and connective tissue components of the cul-de-sac.

Microflora were present at very low levels (*< 5 × 10^5 organismsg\(^{-1}\)*) in the culs-descsacs from all reproductive groups and were undetectable in 15/41 animals. The total number

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