

I'm Mimo, a final year vet student at Cambridge, and this summer I was thrilled to have been given the 2022 Worshipful Company of Farriers Equine Veterinary Studies Award. I was fortunate enough to have been placed with James Coburn AWCF and the rest of his team, Bob, Frazer and Liam, at Newmarket's oldest forge situated at the bottom of the renowned Warren Hill.

My motivation for taking part in the scheme was to understand better the work of a farrier and promote closer working between vets and farriers towards their common aim of keeping horses sound. The medical revolution of 18th and 19th centuries began to change equine medical care into what it is today with the vet being trained through a standardised five-year course. Farriery, although not a medical practice, has seen similar reform. Today they have a four-year apprenticeship scheme with a regulated curriculum. This is a dramatic transformation from the old-style teaching through proverb, thereby bringing the training for both professions onto a more scientific basis.

It became apparent to me, after years of eventing horses, that vets are too often treated as the sole authority on equine lameness issues with the knowledge and skill of the farrier being underappreciated by horse owners and, to a certain extent, vets. This is likely fuelled by the current lack of evidence-based research within the farriers' field when compared to that of the veterinarian. This hinders the development of mutual respect between vet and farrier for each other's work and, hence, to poor communication between the two parties. In the racing world there seems to be much better collaboration between vets and farriers on lameness issues when compared to other equestrian disciplines. Thus, I would like to see improvement in vet-farrier communication in all sport horse realms. The WCFEVSA scheme is the perfect opportunity for this.

I was particularly excited to work with James after reading a research project into how shoeing condition affects hoof breakover, for which he was the lead farrier. The research discovered that shoeing condition has a significant effect on breakover duration and, therefore, risk of musculo-skeletal injuries. A particularly interesting finding was that barefoot thoroughbreds have a longer breakover at slower speeds, but a faster breakover at higher speeds, than shod horses.¹ This research paper highlights the synergy of the vet-farrier partnership in research collaboration.

The week with the team at James Coburn Farriers Ltd consisted mainly of plating racehorses. The speed with which the boys worked through countless racehorses at yard after yard made the job look easy, something I found to be wildly untrue when tasked with knocking up the clenches on a showjumping mare later on in the week. The degree to which I struggled with this fairly entry level task reinforced just how physical and yet precise the work of a farrier is. This was made ever more impressive considering the week I spent with them was the week it hit 40°C.



Figure 2: First effort at making a horseshoe.

Throughout the week we also visited a few stud farms where the feet of the thoroughbred foals were trimmed ready for upcoming sales. It was fascinating to learn how much of an effect an adjustment in hoof balance made to the overall conformation of the foal, and therefore value at the sales. James explained how a foal's shoulders broaden as they grow and so, ideally, the foal should be slightly splay-footed before their shoulders have reached adult width. This allows the shoulders to straighten the toe out as they widen. He corrected pigeon-toed or straight-toed foals by leaving their lateral heel longer than the medial. This would cause the lateral heel to

catch the ground first as the foal places their foot down which subsequently causes a slight lateral twisting of the hoof, thus drawing the inward-facing toe outwards.



Figure 1: Practicing removing shoes.

¹ Horan, K., Coburn, J., Kourdache, K., Day, P., Harborne, D., Brinkley, L., Carnall, H., Hammond, L., Peterson, M., Millard, S., & Pfau, T. (2021). Influence of Speed, Ground Surface and Shoeing Condition on Hoof Breakover Duration in Galloping Thoroughbred Racehorses. *Animals: an open access journal from MDPI*, 11(9), 2588. <https://doi.org/10.3390/ani11092588>

In dealing with these youngstock I was particularly impressed with how tactful and empathetic the team were when dealing with even the most fractious of young horses.



Figure 3: Hoof capsule removed to reveal solar corium.

Driving between yards we talked about remedial farriery. James explained how a heart bar is fitted to the chronic laminitic and the support it provides to the pedal bone. He also explained how carefully the foot must be handled in an acute laminitic episode as attempting to remove the shoe can cause severe vascular injury from even the smallest knocks with the hammer. James further explained that the heel is often raised when shoeing the chronic laminitic to reduce the pull of the deep digital flexor tendon on the pedal bone. He also described how this is much less of an issue on the thoroughbreds we were seeing as they have been bred for a long stride which, conformationally, manifests as an acute ground-hoof/pastern angle which is then mimicked by a sloping shoulder. This can result in a broken back hoof-pastern axis and negative pedal bone rotation with the toe higher than the heel.

One afternoon, after finishing shoeing for the day, James taught me how to make a steel horseshoe from scratch. He talked me through cutting the steel to size, making the toe bend, bending the heel ends in, bending the rest of the shoe and then introducing the nail holes and removing any frogs' eyes before brushing the shoe to get a shine, all the while keeping the bearing surface level. The boys gave copious amounts of help at each stage of this process and even then it was quite a mission to do the accurate shaping needed before the shoe cooled down too much to manipulate. I can't imagine how many hours of practice and tonnes of steel it takes to be able to make a perfectly fitted shoe from scratch to fit an unknown horse as required in the final practical exam to become a farrier.

Earlier in the week James had mentioned he had some frozen legs from one of the horses he used to shoe. I suggested we had a crack at dissecting them on the weekend to revise anatomy. Everyone seemed extremely on board with the idea which resulted in a good number of other farriers and apprentices in Newmarket coming along as well. We boiled one of the hooves to remove the hoof capsule and look at the laminae and sole. Another leg we sawed in half to look at where the tendons and ligaments lay and inserted relative to the bones of the lower leg. The remaining legs we skinned and gradually dissected down from the superficial to deep structures. I was extremely impressed with the dissecting skills of all the farriers and apprentices. They were markedly better than mine and my fellow vet students' skills when we were first tasked with dissecting horse legs at university!



Figure 4: Dissection.

The horse we were dissecting had suffered severe proximal suspensory desmitis in her hind limbs and so it was extremely educational to see how the disease had manifested in the hind limbs when compared to the healthy fore limbs.

I'd like to say a huge thank you the Worshipful Company of Farriers for providing this opportunity and to Dr Lydia Brown for co-ordinating the scheme. I'm extremely grateful to James, Bob, Frazer and Liam for having me. It was one of the highlights of the summer to find how knowledgeable and willing to teach they all were, in combination with what fun they were to be around.

On a recent catch up with the team, James told me that one of his apprentices had won a hotly contested forging competition in Newmarket which is testament to the excellent business he runs and how supportive they all are of each other in their work. I would strongly recommend that any vet student interested in going into equine takes part in the scheme, especially if sport horses are a particular interest. I look forward to applying what

I've learnt in practice. Effective teamwork between vets and farriers is crucial in maintaining soundness in sport horses and this scheme is the perfect place to establish such partnerships and mutual appreciation from the outset.



Figure 5: Hoof capsule removal.