150th Anniversary ZOOLOGICAL RECORD

# SAVING ROSIE:
## THE ZOOLOGICAL SOCIETY OF LONDON

The Zoological Society of London (ZSL), an international scientific organization focused on wildlife conservation and education, first published a compendium of zoological scholarship, known as the Record of Zoological Literature, in 1864.

In the years to come, this morphed into the Zoological Record, the world's oldest continuing database of animal biology. It is considered the world's leading taxonomic reference and has long acted as the world's unofficial register of animal names. Now situated within Thomson Reuters Web of Science™, the Zoological Record's broad scope of coverage ranges from biodiversity and the environment to taxonomy and veterinary sciences.

"The founders of the Zoological Record sought to provide a unified source of zoological literature, but they didn't know that their work would eventually help save a rare rhinoceros at the very institution in which the Zoological Record was founded," said Ann Sylph, librarian at the Zoological Society of London.

As part of its mission to promote and achieve the worldwide conservation of animals and their habitats, ZSL works diligently to save black rhinoceroses (rhinos), a critically endangered species whose population in their native Kenya dropped from 20,000 to 350 in just 20 years, largely due to illegal poaching. The black rhinos are primarily hunted for their horns, composed of matted hair that are then turned in dagger handles or utilized in mythical medicine. In an effort to save this species, the ZSL has bred black rhinos since the 1960s and has operated a project in Kenya on a private ranch to research and plan future reserves for black rhinos.

The efforts of the ZSL and other like-minded organizations have been successful. In 1989 the population of black rhinos in Africa was 3,800; today there are an estimated 5,055 living on the continent, according to Save the Rhino International. Despite this triumph there are still a number of challenges to save this species from extinction. Many of those obstacles relate to the breeding process.

### THE CHALLENGE: CONNECTING TO A CURE

On November 24, 1988, Stumpy, a black rhino, resident at ZSL London Zoo, gave birth to Rosie, a calf who would eventually come to symbolize the value of the Zoological Record in saving endangered species.

The excitement over the new rhino's birth was tempered by the fact that Rosie weighed a meager 17 kilograms at birth, while most healthy rhino calves weigh at least 30 kilograms. Due to her size and weakness, she couldn't feed properly and her mother was unable to provide her with the needed attention.

*"The Zoological Record within Thomson Reuters Web of Science is much more than just straight taxonomic information," said Ann Sylph, librarian at the Zoological Society of London. It has a unique and practical value for researchers seeking answers for various questions on animal biology."*

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The day after her birth, Rosie was removed from her parents and given to the care of zookeepers Brian Harman and Lee Sambrook. They bottle-fed Rosie with her mother's milk every two hours, but after a few days without a suckling calf, Stumpy' s milk ran out. The zookeepers were presented with a problem: how would they keep endangered Rosie alive?

History was not on the researchers' side: to date, all attempts to hand-rear black rhinos had proven unsuccessful. With an extremely short timeframe to save Rosie due to lack of milk and a potentially compromised immune system, her keepers worked with James Kirkwood, senior veterinary officer at Zoological Society of London, to come up with a solution. Knowing that the Zoological Record housed more than a century's worth of industry-leading animal biology literature, the researchers sought answers there.

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## LIFE-SAVING SOLUTION

Within the Zoological Record, the researchers found a 1965 study on the composition of black rhinoceros milk. They used the results of the research to develop a substitute for Stumpy's milk. Rosie tolerated the synthetic milk well and grew rapidly, becoming the first successfully hand-reared black rhino in history and bolstering the number of black rhinos worldwide.
ZSL confirmed in press materials that Rosie's birth and development helped justify previous studies of milk composition and neonatal nutritional requirements– found within the Zoological Record–upon which her treatment was based. Rosie continued to grow into a healthy adult rhino, and is now 26 years old.

## BENEFITS: HELPING TO SAVE A SPECIES

After Rosie, the synthetic milk derived from studies in the Zoological Record has been used to successfully raise and ultimately save a number of black rhinos around the world. Through the diligent conservation efforts of organizations like ZSL, black rhinoceroses continue to populate their native Africa as well as animal reserves, though they remain a critically endangered species.

The ZSL has found that the Zoological Record has even broader use as well. "Using the Zoological Record, researchers can find information on details like the migration and distribution patterns of animals," Sylph said. "This is vital information in assessing the broad and specific impacts of issues such as climate change and invasive species."

Rosie was moved from ZSL to the Port Lympne Reserve in Kent, UK, where she lives today. The Zoological Record lives on in Thomson Reuters Web of Science, providing future scientists and researchers with valuable work and lessons learned from the past.

## LESSONS LEARNED

### Past research unlocks current solutions

The zookeepers utilized the Thomson Reuters Web of Science Zoological Record to quickly locate a study more than twenty years old that held the blueprint to finding a solution for Rosie. The data not only kept Rosie alive, but eventually led to the health and development of other black rhinos. Other valuable research and scholarly literature is maintained in the Zoological Record, providing over 150 years of continuous access to important animal-related scientific information.

## EFFECTIVE WORKING RELATIONSHIPS ARE CRUCIAL TO SUCCESS

The zookeepers were in a race against time and were unable to find the solution on their own, so they enlisted the help of one of the society's veterinarians. He was essential to finding the right study and composing the synthetic black rhinoceros milk that saved Rosie. The Zoological Record in the Web of Science contains insight now easily found and leveraged from other sources.

## DETERMINATION CAN PROPEL BEYOND EXPECTATIONS

The determination of the zookeepers and veterinarian were essential to accomplishing their goal of finding the right ingredients to compose an effective synthetic milk to nurse Rosie. While their focus had been on saving Rosie, their solution saved other endangered rhinos by providing essential nourishment to a number of calves.

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