

NEW Tools from the OLD Country

by Stephen Leslie

Over the last few years at Horse Progress Days and other draft animal power events, I have met European horse farmers who express amazement at how vibrant the horse farming movement is in North America. I have also heard them lament the scarcity of available tools in their native countries and how expensive it is to ship implements across the Atlantic. And yet, when doing research for my second book on farming with horses (*Horse-Powered Farming for the 21st Century*—due to be released by Chelsea Green Publishing in January 2016) I was pleasantly surprised to learn that there are actually quite a number of designers and manufacturers of tools for contemporary horse farmers in Europe today. Perhaps the reason the Europeans view us as being so far ahead of them in new draft animal technology has more to do with the scale of farming with horses in North America — you

won't find many working farms hitching seven or eight horses over there — but, for the small-scale operation, there is a lot of new equipment coming out of Europe to be excited about.

In this article, I will introduce you to a few of them. Our focus will be on tools for the market garden, but new tools designed for work in the forest and in pasture and hay land management are also becoming more widely available to European teamsters. Because farms in Europe are typically smaller than in North America, many of the new implements profiled in this article are designed for use with a single horse.

Europe's agriculture is quite diversified, with intensive farming methods (highly mechanized) in central Europe and farming at a more modest scale in the Alpine or Mediterranean regions. In the latter countries there is rising interest, especially among younger people in healthier food production that respects nature and animal welfare. These people also show an interest in



Seeder-Roller in action. Note the bitless and blinkerless bridle

Photo courtesy of Paul Schmit.

organic farming and market gardening based on animal traction. However, this approach is still in embryo stage compared to conventional modern farming methods in Europe that rely on high inputs of fossil energy and chemical products, which are also dependent on public subsidies.

In the Scandinavian countries, mainly covered by forest, draft horses are primarily used for logging, especially in Sweden there is a lot of innovation concerning the use of horses in the forest. Actually people there also show interest in small equipment for working with horses during summer in gardens or public green spaces. Morgan Andersson of the Österby Smedja Company, is a noteworthy manufacturer of draft horse equipment for work in the forest.

Although the European draft-powered farmers do not have the reservoir of knowledge we enjoy in North America due to the continuous traditions of horse farming carried on by the Plain farmers and others, nonetheless there is a small but persistent (and growing) population of European farmers who are reviving this almost forgotten art. Horse farming is particularly applicable in the European context, because farming in general has remained on a smaller scale.

To begin our short survey we travel to Luxembourg (a country situated in the heart of western Europe, and one of the smallest sovereign nations of that continent). Here, mechanical engineer and horse farmer Paul Schmit conveys the excitement of a new

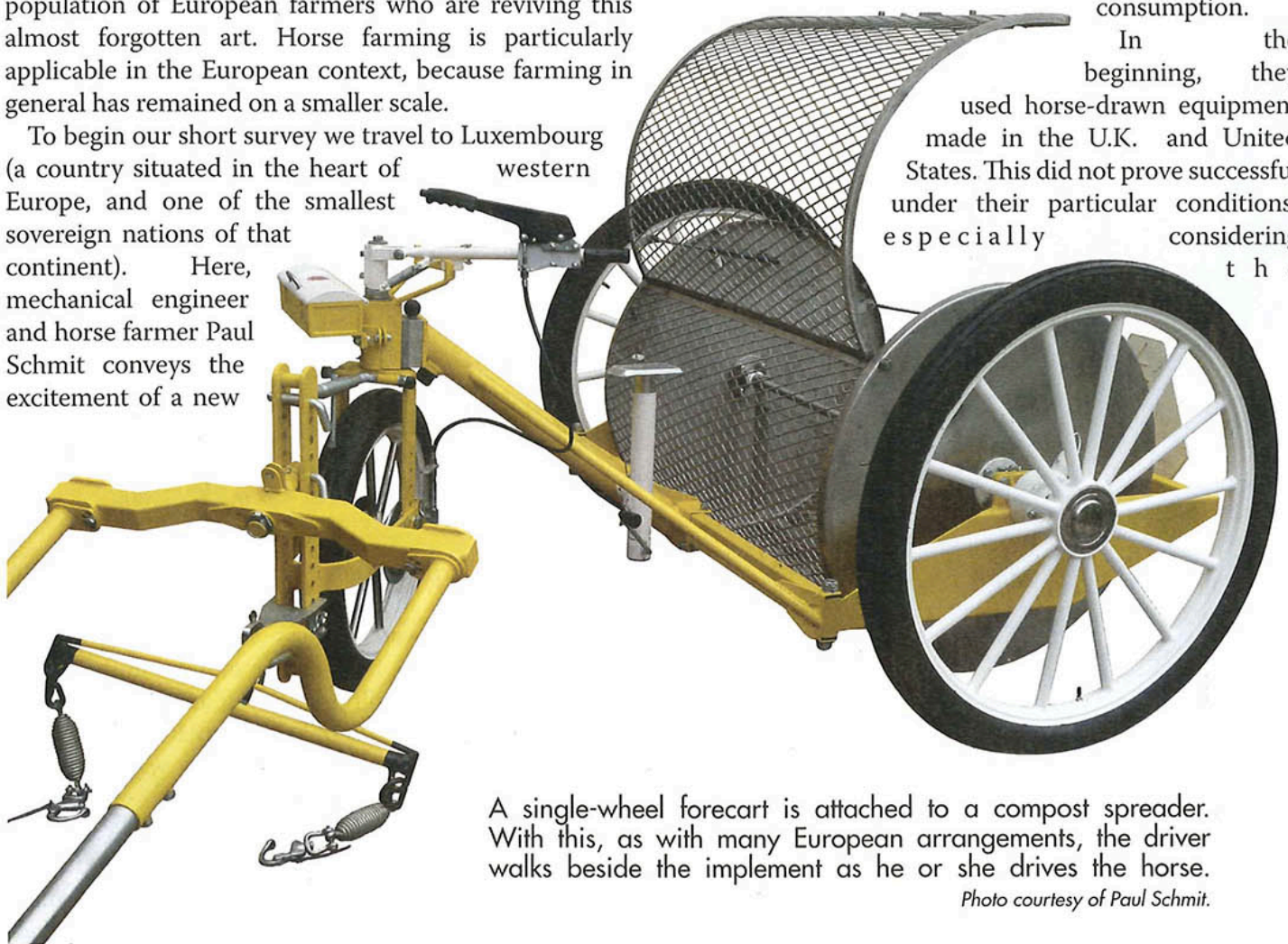
renaissance of draft animal power just getting under way that is focused on intelligently designed state-of-the-art equipment for the small farmer working a small holding with a single horse.

Working with Horses on the Land of his Grandparents

Paul Schmit and his wife, Cathy, farm on his grandparents' land, which they enlarged a little bit. At present, the farm consists of 28 acres of grassland, 4 acres of arable land, 2 acres of woods, 1 mile of hedges surrounding the fields and meadows, a garden of .25 acres, and a small orchard counting 15 fruit trees. The soil is light to medium heavy and their land is more or less flat, which they find suitable for working with horses.

Currently they have five Ardennes horses (three French, two Swedish) of the smaller type, standing 15.1 hands. The hay they raise is fed to their own animals (horses, sheep, and goats) and also sold to other horse owners. On the arable land, they grow field forages. The yield of the garden and orchard is for their own consumption.

In the beginning, they used horse-drawn equipment made in the U.K. and United States. This did not prove successful under their particular conditions, especially considering the



A single-wheel forecart is attached to a compost spreader. With this, as with many European arrangements, the driver walks beside the implement as he or she drives the horse.

Photo courtesy of Paul Schmit.



This European harness and bridle varies significantly from what most of us are used to seeing in the U.S.

Photo courtesy of Paul Schmit.

considerable live horse power requirements of the ground-drive PTO forecarts, as well as the heavy weight of the other equipment, built mainly for bigger hitches.

Therefore, Paul started building his own equipment and evaluating the implements by electronic measurements, which allowed him to register (via data loggers) the draft force and working speed of each implement during field-work as well as measuring the effect of various hitch and harness combinations on the load of the draft horse(s).

As he did not wish to keep all this information under wraps, he founded the non-profit organization "Schaff mat Paerd" (the name translates as "Working with

Horses"). The primary goal of this organization is to generate synergies and transfer technologies about new implements, improved harness and new methods of communication with horses that aim to improve the living and working conditions of draft animals.

For this purpose, SmP published articles in European draft horse magazines and is online with its own webpage, focusing mainly on new implements and harness components, field test reports and other research findings. In 2014, they also started publishing beginner's guidebooks in four languages (English, French, German, and Italian) for sharing new information on the subject

of animal traction equipment and the welfare of draft animals.

The intention of SmP is not to create commercial products, but to develop new prototypes. As Paul feels there are already enough manufacturers of plowing and tillage equipment on both sides of the Atlantic that sell good implements, he focuses on equipment for seeding and planting as well as for spreading organic manure. Another prototype from SmP consists of a single-wheel forecart, designed to lower the support and steering forces of the horse. Called the "Mono-Rad" (single wheel), this forecart is used in combination with various implements like a compost spreader or a minimum-tillage disc seeder but can also be coupled with haying equipment (an application that is still in the planning stage).

Currently, Paul is working on a new disc seeder and also plans to finish a spike-tooth harrow with a weeder kit and trailing crumbler/roller before next spring (2016). Yet another project in the works is the Spedo potato planter. The plan is to start with a single unit as trials and errors of the past have demonstrated it's better to start small. Paul sees no problem in using a single horse with a one-row planter, as the implement marks the next row while planting.


The information published by SmP is offered as "open source," which means that copies of their prototypes are in use in German market gardens. Paul views the activities within SmP like planting small trees; you probably won't see the final result during your lifetime.

In the beginning, Paul mainly used a team hitch and tried to work with a three abreast hitch, but the more horses he hitched, the more he felt he was missing sensitive contact with the animals.

Paul observes that there are people who simply use horses and others who try to work with them. Even if this seems, at first sight, to be the same, in practice he feels there is a huge difference. The name of the SmP association describes not just an activity, but also an attitude. Draft horses are not tractors, which are controlled by mechanical commands. They are living beings and merit honest efforts to establish adequate communication with them during work.

SmP views the horses as work mates. Paul Schmit prefers working with a single horse because he feels he can establish better communication and create more working comfort for the animal. Regretfully, in the "bigger is better" mentality of today, the efficiency of a single hitch is often neglected. Paul states that his grandfather

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The Multi-V multipurpose tool carrier. *Photo courtesy of Albano Moscardo.*



The Flex cultivates asparagus.

Photo courtesy of Albano Moscardo.

owned just one horse to cultivate all his land. For heavier work, like plowing or mowing, the neighbor's horse was borrowed and vice versa.

SmP focuses on single hitches because their target audience is small-scale farmers, wine growers, and gardeners, whose economic working conditions involve small plots or terraced fields which don't offer the possibilities for bigger hitches found in other regions of the world.

Paul started with a Canadian-made belly-backer harness with blinders (blinkers). Traditionally, draft horses were always out-fitted with blinkers in Luxembourg. After a while, he started experimenting and combining various harness parts from different countries. Now he uses blinkerless and bitless bridles on all of his horses, which allows him to establish painless communication with the horses during work, wherein verbal as well as nonverbal commands play an important role. Paul's wife, Cathy, is responsible for training the horses and collaborates in this area within SmP.

With this kind of training it is considered essential that the horse can see not only its surroundings, but also the person and the implement behind it. SmP believes not only in the horse's draft power; but also in its mental power: the less you restrict the animal, the better it can perform its work. Their experiences over the years have shown that horses are more relaxed with this bitless and blinkerless bridle setup. Paul asserts this isn't just a question of animal protection, but also of a higher efficiency. The bridle, like most of the other new harness parts, is manufactured to dimension by Swedish harness makers. Paul sums up his philosophy this way: "Today in Europe, most of us work with draft animals because we want to. Our world has changed a lot, and, without respect for animal welfare, sooner or later our cause will lose its right to exist."

We and the Horse

In the next leg of our tour of European horse-drawn implement manufacturers, we head to

Italy, where we meet another charismatic horse farmer who is drawing on the traditional implements of his country to produce useful new tools. Albano Moscaro is an active teacher and promoter of draft horse farming. He is one of the founders of the study group "Noi e il Cavallo" (we and the horse), which was brought to life to preserve and develop animal traction in Italy. Albano is also a collaborator on many projects with Paul Schmit and SmP. Albano is an organic farmer and is also the sole owner of the horse-drawn implement manufacturing company "Equi Idea." In 1988, he started an organic farm with 25 acres of light sandy soil that is free of stones. He found this an excellent soil type for working with horses. On this ground he cultivates cereals, forage, fruits and vegetables. He has chosen to incorporate draft horses into the management of his farm in order to respect the soil. Through the years, he has also come to deeply appreciate the human-animal relationship.

Currently, he has three Italian TPR mares; "Cavallo Agricolo Italiano da Tiro Pesante Rapido" (Italian rapid

heavy draft horse). In addition, he has a French Comtois gelding. The horses are used for a lot of the work but some is still done by tractor. With the horses he plows, does seeding, weed control and certain aspects of the hay making.

Albano feels that draft horses are very useful in growing vegetables, as they are fast, handy and noiseless. He also thinks that the horse is very suitable for small-scale farming, which is widespread in Italy. Albano says there are no official numbers on how many Italian farmers are using draft because there is no nationwide association that collects data on all the people working with animals. However, he feels this is a growing trend among small farmers, winegrowers and hobby farmers. Albano observes that animal traction is on the rise in distinct regions of the country. He feels that many Italian farmers are considering the workhorse. They see in it great potential as a business partner for their small farms, especially vineyards, vegetable, or herb gardens.



Albano Moscardo cultivating with the Multi-V.

Photo courtesy of Albano Moscardo

For the most part the demand in Italy is for single-horse implements; the use of single-animal hitches is most common. Albano says that the North American way of working multiple hitches of draft animals on bigger farms cannot be easily transferred to Europe and especially to the small farms of Italy.

There is no official organization or public administration supporting animal traction in Italy. Along with the dying out of traditions concerning the use of draft animals, a lot of knowledge has been lost. Through the study group "Noi e il Cavallo," a group of like-minded people set out to change that. A group of farmers founded the association in 1992 after a trip to the United States visiting horse-powered farms. "We and the Horse" is dedicated to the proposition that draft animal power can and should have a place in Italian agriculture now and in the future. Upon their return, the study group built manure spreaders in small quantities for their own use — mainly copies of machinery found in old instruction manuals. They also built a hydraulic round bale loader.

The aim of "We and the Horse" is to collect the experiences of a vanished culture and share them with others. The group intends to create a network

for everyone involved in animal traction in Italy. They maintain a website where they publish a small biannual newspaper, which is available for free.

Albano began Equi Idea, the horse machine manufacturing company, with a few implements built for use on his own farm. That is still where he tests the implements. Later he began making implements for friends. Now Equi Idea delivers machinery throughout the country and also outside Italy.

The products of Equi Idea are:

- A forecart.
- The "Multi-V" (a multi-purpose implement).
- A spring-tooth cultivator.
- The "Flex" (a multi-purpose cultivator).
- The Knife-Roller.
- A round bale loader.

The "Multi" was Albano's first multi-function implement and has since been replaced by the "Multi-V," which he says is lighter and easier to handle. Contrary to the "Multi," which had a reversible two-way plow, the "Multi-V" only has a walking plow, but offers more attachments that are all mounted on the same frame. The "Multi-V" aims to satisfy the requirements of small-scale

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The Multi-V with hilling attachment.

Photo courtesy of Albano Moscardo

farmers and vegetable growers, who want a light and versatile implement. The plow, furrowing and cultivating attachments can be easily interchanged on the frame in just a few minutes without need of a wrench.

The "Flex" has been designed to work on bigger fields. It consists of a frame on wheels upon which multiple tools can be mounted, such as a harrow or a cultivator with spring teeth for heavy work. For seedbed preparation, a roller can be added. Thanks to the precise and snug ball-point system, the attachments can be interchanged in a few moments. The hand-operated hydraulic pump lifts the cultivator for transporting on the wheeled frame.

The "Knife Roller," at present, remains a test implement for evaluating the possibility of cutting down green manure before plowing the land. This type of implement has also found some application in managed woodlots to reduce bracken fern.

Tradition and Innovation

Next we journey to the Iberian Peninsula to meet an innovative horse farmer who is looking to the traditional implements of his homeland to create a new line of tools to serve the 21st-century horse-powered agriculturalist. Alfred Ferris Garcia has been a farmer and a trainer/instructor in draft animal power for 27 years. He fabricates horse-drawn implements based on traditional Catalan designs but with modern improvements. His

farm provides the most complete course on draft animal power in Spain.

Alfred's farm "La Longuera" is located near the town of Elche de la Sierra (in the Albacete province of southern Spain). The soil type is a river clay top soil with underpinnings of sand. Alfred has three mares of the Breton (French) draft horse breed. They are about 1,600 pounds and 16 hands tall. In addition, he keeps a small flock of chickens. The climate allows him to grow a wide variety of vegetables year round. The garden is for his family's consumption and for direct marketing in the local region, "comarca."

For nearly three decades, Alfred has been working with draft horses, and, for the last 10 years, he has been presenting courses on draft animal power. He often travels to give these courses, talks, and demonstrations. Besides working the farm at La Longuera, his other line of work is as a contractor; he gets hired with his horses to do work for other growers in vineyards, horticulture and forests in different parts of Spain. He also manufactures several horticultural implements based on designs that were once traditional in the zone of "La Huerta de Valencia" (where he was born). Alfred has made improvements on these traditional implements and also adapted them for cultivation work in gardens and other places. He has sold these implements all over Spain, where they are being utilized with draft animals.



The Forcat.

Photo courtesy of Alfred Ferris Garcia.



The Cultivador de Vinya.

Photo courtesy of Alfred Ferris Garcia.

What in Spanish or Castellano is called a plow ("arado") in the Catalan region is called a "Forcat." This is a plow with complementary (add-on) tools, such as: plow, hiller, furrow-maker and hoe. It's a lightweight implement, and tools are interchangeable by using a hammer because the tools are simply secured with a wedge. The Forcat has shafts in the form of a U-shaped apparatus that embraces the animal. The advantage of having shafts is that they enable turns requiring little turning space and consequently, leave more room for the crops. While operating the Forcat, one hand is on the implement and the other on the lines. You can lift the Forcat with one hand to make a turn, actually lifting the implement right over the rows. This makes it especially practical and precise for working within the crop rows in small parcels where you want to utilize every square foot of arable ground in a crop-intensive field. You can get by with virtually no headland, which also makes it useful in greenhouses. In addition, because of its lightness and maneuverability, the Forcat is also very manageable on hillsides or among tree crops and vining crops.

With the Forcat, you can adjust the depth by turning the screw in between the U-shaft and plow. This can also be done by changing the height of the shafts on the back of the draft animal. The Forcat is one of the most versatile and practical tools for the type of horticulture practiced in Spain: intensive horticulture requiring precision, with a large variety of crops and a succession of planting schedules. Although there are similar tools in other parts of Spain, the model Alfred fabricates is based on the traditional Forcat from Valencia upon which he has incorporated

improvements to make it even more practical, manageable and versatile.

Alfred also fabricates a smaller tool-carrier (multipurpose tool) for work in the vineyards (or viticulture). The "Cultivador de Vinya" is a lightweight, ergonomically adjustable walk-behind tool-carrier with several interchangeable tools, including a small moldboard, cultivating shovels and a chisel tooth. It is designed to take on all aspects of vineyard management throughout the cycle of the seasons.

Another traditional implement he has refurbished is a small harrow called the "Tabla de Libro," which existed in only one part of Valencia. It has hinges so, when needed, it can fold and shape to the form of the ground you are working, such as potato hills/ridges. To use this harrow you stand on it and actually grab the tail of your horse for balance. With the other hand you hold the lines. No eveners is necessary; the horse hitches directly to the harrow itself, and the teamster can swing into a turn by making a slight rocking motion. To make a full turn, you step off. There is a rope attached to the harrow so you can lift it when needed to make sharp turns. The width of the harrow is adjustable. On other farms in Spain, Alfred has demonstrated how this implement can be adjusted to accomplish weeding between crop rows or for the preparation of planting ridges.

Alfred says, in Spain, interest in the subject of animal traction is growing. His association ANTA-La Esteva represents the present day draft animal power movement in Spain. ANTA stands for "Asociación Nacional de Tracción Animal" (national organization for animal traction). The association currently has 30 members, spread over the many autonomous Spanish communities. Although the association's membership is increasing by increments, the numbers of people expressing interest in the topic and participating in the training courses is growing rapidly. The association is active in making draft animal power accessible and relevant and provides channels to specific areas of interest so that members can network and learn more about the various aspects of modern draft animal power.

Although ANTA has only been up and running for about two years, the group already has some very interesting activities. They have formed alliances and agreements of cooperation with agricultural schools and other draft animal associations across Europe. They have a web page and a Facebook page. On the web, they continually add articles, videos and publications in the archives, as well as new members in the database of

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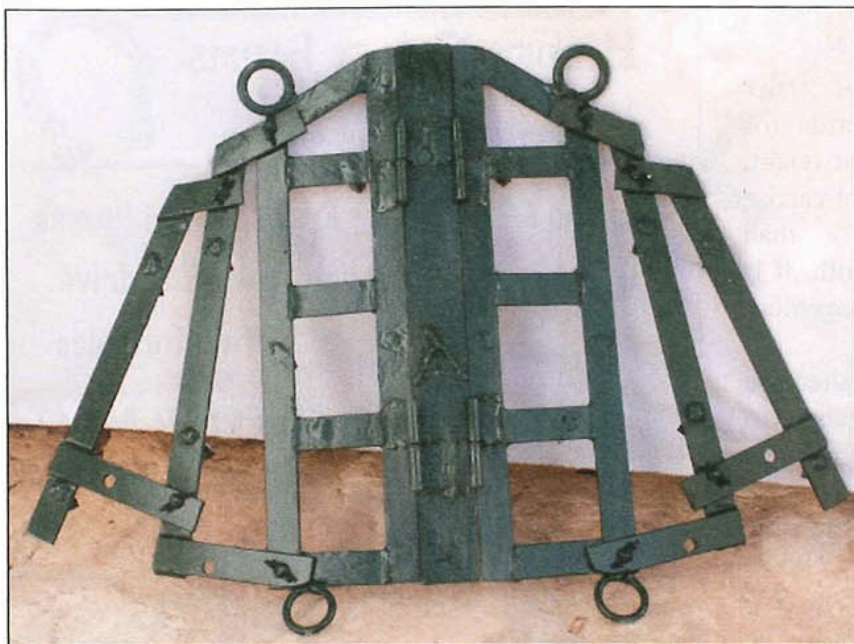
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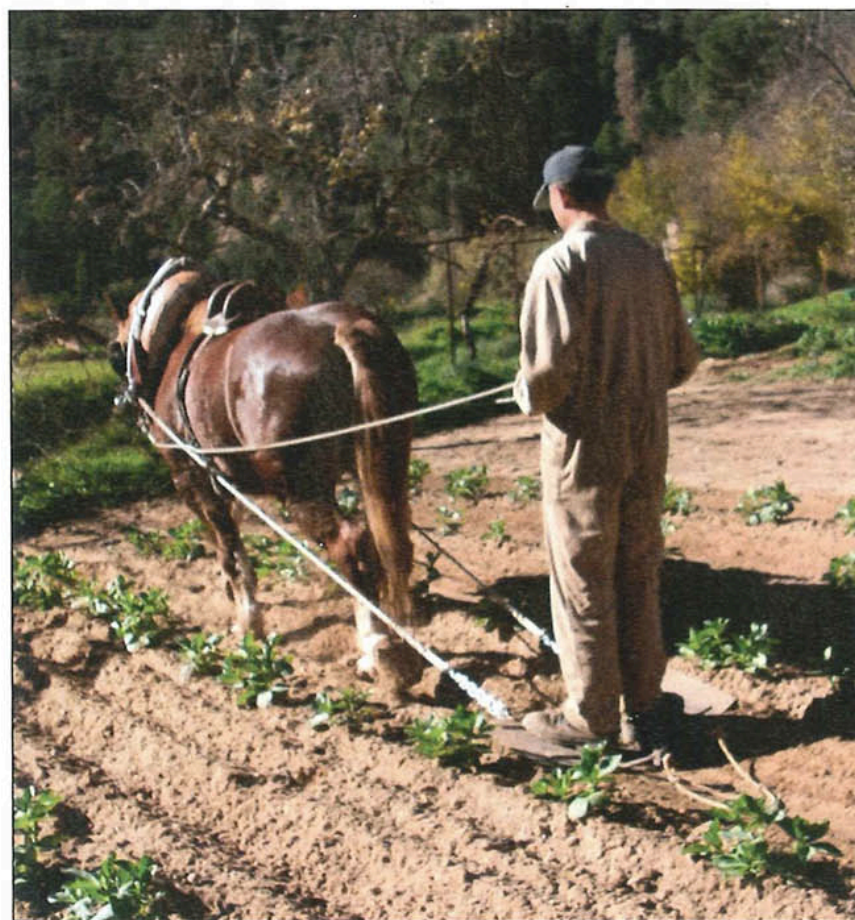
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The Tabla de Libro. The hinged wings on the sides of this small harrow can fold in to change its shape. The traces hook directly to the implement (see below).

Photo courtesy of Alfred Ferris Garcia.



The Tabla de Libro used as a cultivator. *Photo courtesy of Alfred Ferris Garcia.*

people associated with animal traction, either as teamsters or as veterinarians, saddle and harness makers, toolmakers, trainers, equine professionals, etc.

To date, almost all of the training activities that ANTA has promoted or in which they have been presenters have had full participation. Although they sometimes propose, design and promote activities or courses themselves, in most cases they are responding to requests from people, groups or entities seeking out their instructional services. Through their participation in these well-attended training seminars, lectures and forums, Alfred perceives a growing demand from the public for draft animal training activities. He feels there is a real interest today in this subject, as well as large gaps of knowledge that will need to be filled.

Draft Horse Techniques

For our final report we journey to Switzerland. Christoph Schmitz is a skilled carpenter who is also certified in agricultural business administration (specializing in mare's milk production). In addition to his logging work in the forest, horse breeding and horse training, he has a horse-drawn implement manufacturing business called Schmitz Pferdezugtechnik (draft horse techniques). He makes modern machinery for draft animal power and also repairs, improves and sells old machinery. He makes the new machinery to order. His three-year-old enterprise is growing, and he hopes to hire an employee next year to help build machinery.

Recent years have seen constant change in the draft horse industry. Christoph is not one to denigrate the past, but he considers it important to preserve what has been learned through experience and continue to improve upon the existing models. He tests new products in the field and makes design selections based on quality, not on the potential quantity to be produced. His aim is to offer his customers the most modern machine powered by one of the oldest renewable energy sources known to humankind. Pferdezugtechnik's product



This tractor disc harrow adopted to draft animal power is called "DISCOVERY." The wheels can be raised and lowered for transport and work positioning.

Photo courtesy of Christoph Schmitz.



A pneumatic drill in use for grass seeding (the pneumatics are battery-powered). The second axle behind the forecart helps lift the drill.

Photo courtesy of Christoph Schmitz.



Drilling wheat. The drill is made of two combined older-model grain drills, which means that in essence this tool combines the old with the new—and makes it all look and work like new.

Photo courtesy of Christoph Schmitz.

designs feature lightweight materials built to offer less resistance in order to achieve long life and low wear on both implements and horses. In designing implements, Christoph places the impact on the horse front and center; next comes consideration of the human operator. However, it is his mission to design implements that will facilitate horse-drawn work and, thus, motivate people to

want to work this way by making it as easy and pleasurable an experience as possible.

In the photos on this and the previous page, we present three of Christoph's products. Recently, his company Schmitz Pferdezugtechnik, has released onto the market a ground-drive PTO cart that is quite similar in form and function to the new carts from I&J Mfg. though about

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half of the weight of the I&J version. He manufactures two forecarts: the “Cotti 2013” and the ground-driven “Michel 2014.” The ground-driven cart, pulled by two or three horses can operate a sickle-bar mowing machine with a bar length of up to seven feet and can mow three acres in one hour. In the pictures presented here, the “Michel 2014” is used. You can see the cart hitched to two of his implement designs as well as a disc that has been adapted for draft horse power. Christoph is serious about incorporating the most modern, efficient, and practical designs and materials into his new horse-drawn machinery — while also responding to the wishes of his customers. He has many ideas and most certainly will have a lot more equipment to offer in the near future. His motto is: “It will work, we just have to find out how.” These products demonstrate how Christoph Schmitz is improving upon old horse-drawn technology and adapting modern tractor implements to horse farming.

A New Multi-Purpose Tool Carrier from France

For our final equipment profile, we head to France to hear about an innovative and simple multi-purpose tool fabricated by the Prommata group — a non-profit association based in Ariège, France. Prommata started out with the mission of developing animal traction tools to aid people struggling to feed themselves in the so-called “developing countries” of Africa. Prommata was formed with the mission to serve and support small farmers using animal traction in their quest to remain viable and independent. Though that mission still remains, they also discovered a hunger and a need for these kind of tools among new and young farmers on their own native soil. The Mamata multi-purpose tool carrier systems are designed and produced by Prommata.

At a time when most considered horse-drawn options a thing of the past, French agricultural engineer Jean Nolle (1918-1993) was active in continuing the development work on draft-animal-drawn tool carriers. Nolle began his work in 1955 in Africa, where he developed his three principles of design:

1. Simplicity of design.
2. Multipurpose use.
3. Standardization of components.

He later gave this three-principle philosophy the acronym MAMATA (Machinisme Agricole Moderne a Traction Animale). Derivatives of Nolle’s early work have been further developed and have been manufactured in France now for more than 30 years. And thanks to Nolle himself, France became the agricultural engineering



The Kassine set up to make planting ridges.

Photo courtesy of Henk de Mink.



The Kassine fitted with a weeding-knife attachment.

Photo courtesy of Henk de Mink.

center for tropical countries for CEEMAT (Agricultural Services Division of the United Nations) aid projects. In his lifetime, Jean Nolle himself carried out development and advisory work and travelled to 72 countries.



The Kassine fitted with a weeding-harrow attachment.

Photo courtesy of Henk de Mink.

The Prommata association currently has 350 members and carries out several functions. It accompanies and advises project development workers in-country and overseas, publishes a newsletter and works to develop and promote new animal-powered tools. The resources for the association come from membership fees, donations and from the sale of equipment and training they provide to members. They spend a large part of their time in the research, design, testing and development of new prototypes in their Rimont workshop in Ariège. At home or as part of their international missions, the goal is always the same: to encourage exchange and support among farmers by transferring simple, inexpensive technologies, empowering and responding to local needs.

The Mamata line features several versatile multi-tool carrier systems that are suitable for use with horses, mules, donkeys or oxen. The tools are interchangeable and can fit every need for tillage and cultivation. Because of its standardized production the Mamata systems allow for the exchange of tools between neighboring businesses. The most widely recognized of these tools is the Kassine.

The Kassine is Prommata's "flagship" multipurpose tool. The earliest prototype of the Kassine (then called the Kanol) was first introduced by Jean Nolle in 1988. By the mid-1990s the Prommata group had perfected it to a state-of-the-art multipurpose implement. Initially designed for both draft donkeys and oxen, the Prommata can be pulled by one or two animals. A single-tree with an off-set capacity, plus the special design of the uni-handle bar, allows one person and one draft animal to walk off-set to one side of the row crop while the

implement straddles the row. The two front wheels can be locked in with a pin to run straight or released to have a pivoting capacity. The pivoting wheels track the horse and allow the implement to execute sharp turns at the end of the row. The tool frame accommodates a wide range of attachments, including (but not limited to): a moldboard, a ripper-tooth, crumbler/roller, S-tine harrow, Lely-style harrow, cultivator sweeps, finger-weeders, disc hillers and a potato digger. Three or more sets of these various tool attachments can be mounted on the frame simultaneously to achieve advanced tillage effects. For instance, leeks may be cultivated in-row with finger-weeders, near to the row with "horse-hoe" sweeps set in close and goosefoot sweeps set just to the outside of them, and, finally, hilled with discs — all attached to the same frame for one single pass. The Kassine can be used in any row crop system but is especially designed to be effective at ridge building.

As was intended by its designer, this versatile implement holds great potential to help restore and increase local autonomy and food sovereignty among small farmers everywhere.

RE

Stephen Leslie, along with his wife, Kerry Gawalt, and daughter, Maeve, manages Cedar Mountain Farm; a 4 acre Fjord Horse-powered CSA and Jersey cow dairy, located at Cobb Hill Co-Housing in Hartland, Vt. Stephen is the author of "The New Horse-Powered Farm" and "Horse-Powered Farming for the 21st Century," both from Chelsea Green Publishing. He is a regular contributor to the Small Farmer's Journal and Rural Heritage Magazine.

Resources

Schaff mat Pærd (working with horses; or "SmP" for short): The primary goal of SmP is to generate synergies and transfer technologies about new implements, improved harness designs, as well as new methods of communication with horses that aim at improving the living and working conditions of draft animals.

ANTA-La Esteva: Animal Traction in Spain, Alfred Ferrís García, Cortijo La Longuera 02439 Elche de la Sierra, Albacete, Spain; <http://www.anta-laesteva.es>; la-longueraalfred@yahoo.es.

Equi-Idea: Horse-drawn implements manufactured in Italy; plows, harrows, cultivator, tool carrier; Via Lazzaretto, 98, 37133 Verona, Italy; www.noieilcavallo.org (also see listing for Noi e il Cavallo below).

Noi e il Cavallo (We and the Horse): New horse-drawn implements and the study group "We and the Horse"; Albano Moscardo, Italy; Albano.moscardo@libero.it; <http://www.noieilcavallo.org>.

Pferdezugtechnik — Christoph Schmitz: Innovative draft horse from Switzerland, forecarts and logging carts; schmitz@bluewin.ch www.pztn.de.

Prommata: Implements for the Kassine tool carrier, walking plows, cultivators. Association Prommata- La Gare, 09420 Rimont, Italy; Tel. 05.61.96.36.60; fax: 05.61.66.99.58; www.prommata.org; www.assoprommata.org/IMG/pdf/brochure_mamata.pdf.